



BRILL



brill.com/jim

Andalusi Binding: A Model of Islamic Binding from the Iberian Peninsula, 14th–16th Century^{*,**}

Ana Beny

Book and paper conservator, Madrid (Spain)

info@anabeny.com

Teresa Espejo Arias

Department of Painting, Faculty of Fine Arts, University of Granada (Spain)

tespejo@ugr.es

Juan Pablo Arias Torres

Department of Translation and Interpreting, Faculty of Philosophy and Languages, University of Málaga (Spain)

jparias@uma.es

Abstract

Since the beginning of the 8th century when the Arabs first settled in the Iberian Peninsula, up until the end of 15th century, Christians, Jews and Muslims exchanged information and cultural influences within the domains of al-Andalus. During this time, there was a dramatic increase in books produced with unique features. When the

* Submitted 1 October 2013; accepted for publication 19 November 2013.

** This work was also supported by the Project MAT2008–020008/MAT—“Application of specific analysis technologies for the knowledge of materials and improvement of conservation processes of Arab manuscripts of the Iberian Peninsula 10th–18th centuries”—granted by the Spanish Ministry of Science and Technology; and the Excellence Research Project P08-HUM 04188, granted by the Junta de Andalucía “Characterization of the materials of Arab manuscripts in the Iberian Peninsula for the development of a corpus of documents”. We would like to thank the institutions charged with caring for these documents for their cooperation in facilitating this study. And last, but not least our gratitude to Jake Benson for his efforts editing this English version of our original Spanish paper, presented at the conference “Codicología e historia del libro manuscrito en caracteres árabes”, Madrid, 27–29 May 2010.

Catholic Monarchs of Castile and Aragon persecuted the Arabs, the majority of these books were burned or damaged, with a few exceptions that were hidden or relocated for safekeeping.

As part of the research project, “New analytical technologies for the understanding of materials and production techniques in Arabic manuscripts of al-Andalus” (CTQ2005–07717), researchers from different fields studied the methods and materials utilised in the production of books found in different Spanish collections. We found that among the examples produced in al-Andalus that characterize the traditional materials and methods associated with Islamic bindings, certain examples follow a distinct and consistent structure, albeit with certain variations in covering materials, end band sewing, and text block dimensions. This distinct structural element consists of one contiguous piece of fabric that lines the internal side of the covers and creates a natural hollow spine. Contrary to the generally-held view that the covers were made independently from the text block, our research found that in some manuscripts, the covers were made together with their text blocks. This variety of techniques for Islamic bindings refutes the idea that covers were made independently from text blocks. This discovery has subsequently been described in other works by Kristine Rose¹ in respect of Turkish bindings and by Karin Scheper² in broader areas of the Islamic world and relating to different periods. Interestingly, this structure has certain features reminiscent of later Coptic covers. Since this hybrid is clearly the result of a cross-cultural exchange within the region at the time, we have named it the *Andalusi* binding.

We have identified a small number of codices from the 14th–16th centuries that have these characteristics. They originate from different geographic locations within the historical domains of al-Andalus. There seems to have been a specific type of binding associated with al-Andalus during the later centuries of the Arabic occupation of the Iberian Peninsula. We expect that other bindings with similar features will be discovered that will confirm this hypothesis.

Keywords

al-Andalus – codicology – bookbinding – 14th–16th century

-
- 1 Rose, Kristine, “Conservation of the Turkish Collection at the Chester Beatty Library: A new study of Turkish book construction,” in: *Conservation and the Eastern Mediterranean, contributions to the Istanbul Congress 20–24th September 2010*. Edited by Christina Rozeik, Ashok Roy and David Saunders. London: International Institute for the Conservation of Historic and Artistic works, 2010, pp. 45–49.
 - 2 Karin Scheper, “Three Very Specific Binding Features, shedding New Light on Islamic Manuscript Structures” in *Journal of Islamic Manuscripts* 4, 2013, pp. 82–109.

Introduction

During the period when the Arabs settled in the Iberian Peninsula, Christians, Jews and Muslims lived side by side, leading to a noticeable intermingling of the three cultures. In fact, al-Andalus became a major European focal point for the production of books. During the Reconquista, concluded at the end of the 15th century by the Catholic Monarchs, the majority of this legacy was destroyed, for political and sectarian reasons. Despite these events, the Moriscos managed to preserve their books by hiding them or secretly moving them from place to place, until they were finally expelled in the early 17th century.

Few Arabic script manuscripts and documents produced within the Iberian Peninsula survive today, largely due to the extensive public destruction of books. Despite this, we have been fortunate enough to be able to analyse several such manuscripts produced in various locations throughout al-Andalus. Amongst these, we have identified a group that share a unique codicological structure: the spine lining fabric is connected to the text block through the sewing and/or primary end band, creating a natural hollow spine. This one continuous piece of fabric lines the internal side of all parts of the covers. The oldest of these manuscripts is from the Sacromonte Abbey in Granada and is dated 1302.³ This is the only example we found from the 14th century, with the remainder dating from the 15th and 16th centuries. Similar characteristics were identified in the Arabic manuscript collection at the Sacromonte Abbey⁴ and the P.P. Escolapios Library⁵ in Granada, as well as the Malaga Provincial Historical Archive,⁶ the Royal Academy of History in Madrid, and the Public Library of Extremadura, Badajoz.

3 Teresa Espejo Arias and Juan Pablo Arias Torres, "Addenda a los manuscritos árabes del Sacromonte: datos codicológicos, estado de conservación y nueva incorporación" in *Miscelánea de Estudios Árabes y Hebraicos, Sección Árabe-Islam* 54, 2005, pp. 66–67.

4 Espejo Arias and Arias Torres, "Addenda", pp. 39–78.; Teresa Espejo Arias and David Torres Ibañez (eds.): *El Comentario al Libro de las Frases o Sharh al Yumal de Ibn al-Fajjar al-Bayri: Reproducción fotográfica digital, estudio codicológico e informe de restauración del Ms. XVI del Sacromonte de Granada*, Granada (Junta de Andalucía, Consejería de Cultura) 2010.

5 Teresa Espejo Arias, "Estudio y tratamiento de un Corán del siglo xv. Biblioteca P.P. Escolapios de Granada", in *Boletín del Instituto Andaluz de Patrimonio Histórico* 15, 1996, pp. 53–59.

6 Teresa Espejo and Ana Beny, "Book I from the Collection of Arabic Manuscripts from the Malaga Province Historical Archive: An Example of Andalusí Binding", in *Care and Conservation of Manuscripts* 11, Copenhagen (Museum Tusulanum Press), 2009, pp. 121–133.

TABLE I *Manuscripts studied*

Reference	Location	Date
MS. 16	Sacromonte Abbey, Granada.	1485
MS. 20	Sacromonte Abbey, Granada.	1302
Arabic Qurʾān	P.P. Escolapios Library, Granada.	c. 15th cent.
L-14029	Provincial Archive, Málaga	c. 15th cent.
Aljamiado 11/9399 (<i>olim</i> T2)	Gayangos Collection, Royal Academy of History, Madrid	16th cent.
Hornachos' prayer book	Extremadura Public Library, Badajoz	16th cent.

All of the bindings that were studied feature a distinctive fore-edge and pentagonal envelope flap. François Déroche, an eminent authority on Islamic codicology who carried out pioneering work in terms of defining the codicological characteristics of Islamic bindings, classifies three main categories. The examples pertinent to our research constitute bindings clearly classifiable as Type II, the most commonly found throughout the Muslim world.⁷ According to Déroche's definition, these bindings share certain key features, including an envelope flap that forms part of the covers, which are made independently of the text block.⁸ The covers are adhered to the spine and the endpapers of the text block, apparently in a similar way to modern case binding, although some of the definitions for case binding fundamentally presumes a hollow back structure. [fig. 1] As mentioned above, a variety of techniques were used, which refutes the idea that the covers were made independently from text blocks. This has subsequently been described in other works, by Kristine Rose⁹ in respect of Turkish bindings and by Karin Scheper,¹⁰ who demonstrates that the

7 François Déroche classified the most widely usual models of bindings as In the latest edition of Déroche's work, from 2012, the author continues to differentiate between these three types, although he no longer names them Types I, II and III. See: François Déroche, *Manuel de codicologie des manuscrits en écriture arabe*, Bibliothèque nationale de France, 2000, pp. 278–283; François Déroche et al., *Islamic Codicology: An Introduction to the Study of Manuscripts in Arabic Script*. London (al-Furqān Islamic Heritage Foundation), 2006, p. 258; François Déroche and Valentina Sagaria Rossi, *I manoscritti in caratteri arabi*, Roma (Viella), 2012, pp. 248–251.

8 Karin Scheper, "Three Very Specific Binding Features".

9 Kristine Rose, "Conservation of the Turkish Collection at the Chester Beatty Library".

10 Karin Scheper, *The Technique of Islamic Bookbinding: Methods, Materials and Regional Varieties*, Leiden (Brill), 2015.

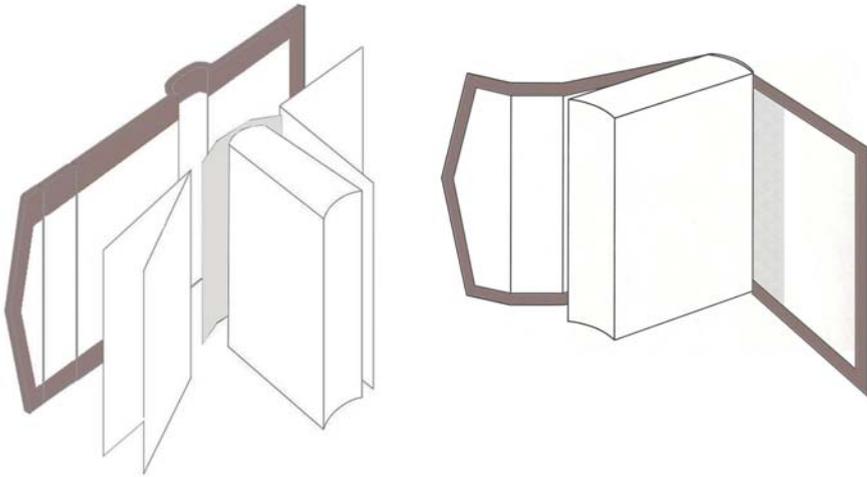


FIGURE 1 *Assembly diagram of the more usual Arabic binding*
ORIGINAL DRAWING: AUTHORS

Islamic manuscript tradition belongs to such a vast geographic area and extensive period that it is safe to assume that there must be several quite distinctive local traditions.

The construction of the bindings discussed in our study is one more local variety that clearly differs from the typical model, i.e. that the covers are made independently from the text block. The fabric used to line the spine extends across the inner side of the pasteboards, fore-edge, and envelope flap. The covering material was subsequently applied to the exterior of the binding, and turned in over this internal fabric lining. In most cases, the internal fabric lining was left exposed and effectively formed the doublures of the binding. [fig. 2, fig. 4]

Hossam Mujtār Abbādī, in his translation of Bakr al-Ishbīlī's treatise *Kitāb al-Taysīr fī Ṣinā'at al-Tasfīr*, describes more than one kind of binding. However he does not make clear in the text which one he is referring to when he describes the techniques, providing several options for many steps, such as the end bands. One of the methods describes how the covering was assembled independently of the text block, and how the two were put together by means of the endpapers and the hinge formed by the spine lining.¹¹ He highlighted the difficulty of executing covers to the required dimensions, particularly with

11 Hossam Mujtār Abbādī, *Las artes del libro en al-Andalus y el Magreb (Siglos IVH/X d.C.–VIIIH/XV d.C.)*. Madrid (El Viso), 2005, p. 75.

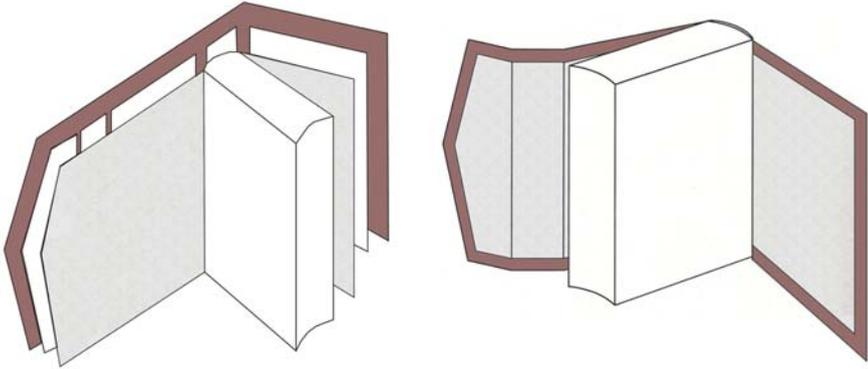


FIGURE 2 *Assembly diagram of the "Andalusi" binding*
ORIGINAL DRAWING: AUTHORS

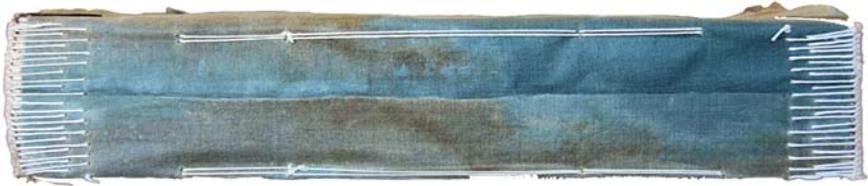


FIGURE 3 *Ms 16 from the Sacromonte Abbey during the conservation process. Spine with external thread of the text block and end band sewing, before covering*
TERESA ESPEJO ARIAS AND DAVID TORRES IBAÑEZ (EDS.): *EL COMENTARIO AL LIBRO DE LAS FRASES* (2010), P. 404

regard to making the envelope flap. A number of steps in the text appear to indicate the construction of the Andalusi binding, which may have addressed this problem.

Our interpretation is based on the Spanish and English translations of the Arabic text, rather than on the original. In both the Spanish version from Abbādī and in the English version from Adam Gacek,¹² al-Ishbīlī describes two types of binding. We understand that the *al-maṣāḥif al-mulawwaḥah* or *al-mukassar*, which uses two pieces of leather and wooden boards, refers to box binding, and the other, named *al-maṣāḥif al-sifrīyah*, with pasteboards and a continuous piece of leather as the envelope flap binding, comprises

12 Adam Gacek, "Arab Bookmaking and terminology as portrayed by Bakr al-Ishbīlī in his *Kitāb al-Taysīr fī ṣinā'at al-Taṣfīr*" in *Manuscripts of the Middle East* 5, (1990–1991), Ter Lugt Press, Leiden, 1993, pp. 107, 109.

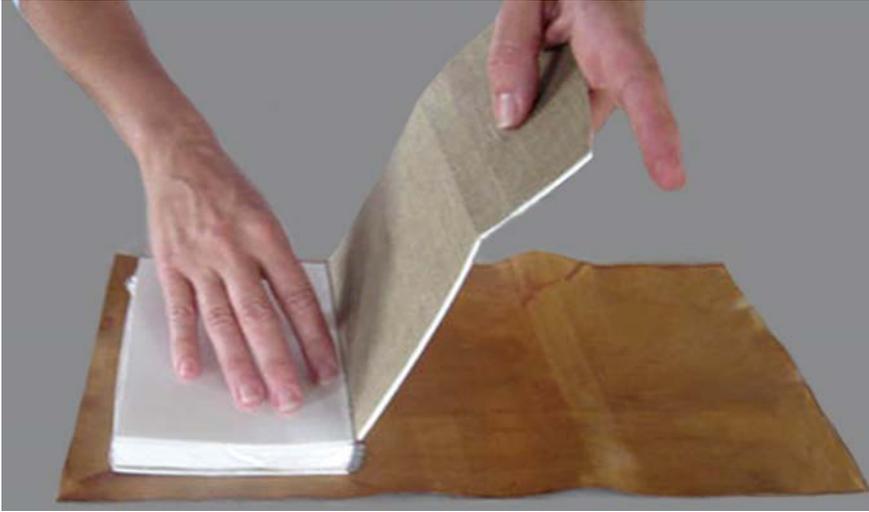


FIGURE 4 *Attempt to reconstruct the binding studied. Beginning to adhere the leather over the boards already assembled to the text block*

PHOTOGRAPHY: AUTHORS

a number of steps that could match with the technique used to construct the Andalusí binding.

Scheper's interpretation¹³ is that al-Ishbīlī describes a covering technique that utilises two pieces of leather for covering the boards in order to attach the boards separately. This allows for an accurate positioning of the boards and flap. Scheper finds some passages of the text confusing, such as the "instruction to place three or four sheets of paper on top of the hinges" in a paragraph about spine lining. This could be interpreted as a piece of paper of three or four layers that is inserted between the spine of the text block and the lining found in five Andalusí bindings. The "uneven cut near the end bands"¹⁴ could refer to the stage of turning in the head and tail when covering an Andalusí binding, i.e. the end band core is pasted along the boards at the hinge on the outer side of the lining. This doubtlessly made it necessary to make a cut at the turn-in at these points.

It is well known that envelope binding was inherited by the Arabs from the Copts and subsequently disseminated throughout their sphere of influence.

13 Karin Scheper, *The Technique of Islamic Bookbinding*, pp. 154–155.

14 Adam Gacek, "Arab Bookmaking and Technology", p. 110, and Karin Scheper, *The Technique of Islamic Bookbinding*, p. 157.

Lining the inside of the boards with fabric is a feature of some early Armenian bindings.¹⁵ The end leaves mentioned by Georges Marçais and Louis Poinssot in their description of box binding from Kairouan could well be predecessors of the Andalusí structure.¹⁶

There is another remarkable characteristic of the Andalusí binding structure that is very different from other Muslim traditions. Surprisingly, the outer covering material never adheres to the spine of the text block. This mechanically stitched, non-adhesive fabric lining of the spine thus creates a natural hollow.

Our findings lead us to believe that there was a particular method of book-binding in this part of the Islamic world, quite distinct from other models. We propose the term “Andalusí binding” for this type of structure.¹⁷ Although few in number, these examples are significant for their common features and presence in different collections today, as well as the geographic area of origin, and a chronological timespan of the 14th–16th centuries. They are similar in that the fabric was used not only to strengthen the spine and provide a sewn board attachment, but it was also extended to form the doublures of the boards and to connect the envelope flap.

Binding Structure and Hypothetical Procedures

While we can observe the physical construction of surviving bindings, the following steps are a hypothetical overview of the procedures that may have been used. Only one continuous piece of fabric lines the internal side of the entire binding. In general, the quires of the text block were sewn with linen thread and using a linked kettle stitch at two stations.¹⁸ The sewing is stitched

15 J.A. Szirmai, *The Archaeology of Medieval Bookbinding*. Aldershot, Hants (Ashgate Publishing Ltd), 1999, p. 89.

16 See nº 63 bis, attributed by the authors to the 10th century and, more specifically, the description of nº 89, which they attribute to the 11th century as “un feuillet de parchemin, lui-même recouvert par un fin tissu de soie verte.” That said, it is unclear whether, in this case, the green silk fabric is anything other than a pastedown. See Georges Marçais and Louis Poinssot, *Objets kairouanais, IXe au XIIIe siècle. Reliures, verreries, cuivres et bronzes, bijoux*. Tunis (Direction des Antiquités et Arts), 1948, pp. 142, 181.

17 Juan Pablo Arias Torres and David Torres, “El manuscrito andalusí: una propuesta concreta de definición”, in: Teresa Espejo and Juan Pablo Arias (eds.), *El Manuscrito andalusí. Hacia una denominación de origen*. Granada (Junta de Andalucía), 2008, p. 85.

18 Karin Scheper has found two manuscripts in the collections of the Leiden Library with similar sewn-on spine-linings/doublures, though they were made of leather. See pp. 265–

through the first and sometimes second quires together with the reinforcing fabric and then continues without sewing through the cloth. Once the final quires are reached, the cloth is once again sewn through with the folds as at the outset. Before this final stage is completed, a strip of thin laminated pasteboard, cut to the width of the spine, is inserted between the fabric and the spine of the text block, to provide greater reinforcement of the spine. [fig. 2]

For the most part, both the edges of the text block and the fabric were trimmed together at the same time. Only the cloth on the back side was not trimmed with the text block. Instead, it was folded back, away from the fore-edge, for protection, so that it could be adhered and trimmed later along with the fore-edge and envelope flaps of the binding. Once it was safely tucked out of the way, the fore-edge of the text block was trimmed along with the cloth on the front of the book, followed by the head and tail edges.

In the majority of cases, the same thread used for sewing the text block was also used for the primary sewing of the end bands, which were carefully stitched over a narrow, folded leather core that measured longer than the width of the spine, and simultaneously through both the quires and spine strip. An alternating staggered pattern was used so as to avoid perforating the spine strip and cloth in a straight line, which could potentially cause a weak point where they could tear off easily. [fig. 3] After sewing, the extended length of the end band core was adhered onto the outside of the reinforcing fabric.

Next, the pasteboards of the binding were cut to size and adhered to the outside of the reinforcing fabric that had been previously stitched to the text block, leaving a gap of a few millimetres in the joint. Finally, the boards were covered in either leather or parchment, which was turned in over the internal cloth lining. [fig. 4] This cloth lining was left exposed on virtually all of the examples that were studied with no additional doublure or pastedown adhered onto the inside of the covers.¹⁹

270 in *The Technique of Islamic bookbinding*, in which she refers to the Andalusian binding technique as described in Teresa Espejo & Ana Beny, "Book I from the Collection of Arabic Manuscripts from the Malaga Province Historical Archive". In addition, there is the possibility that the technique may have been developed, or at least may also have been used, in the Maghreb.

19 Only the front board of Aljamiado MS. 11/9399 (*olim* T2) features a paper pastedown.

TABLE II *Cover features*

Reference	Dimensions (mm) Length, width, thickness	Covering	Decoration
MS. 16	295×225×60	Leather	Yes
MS. 20	305×235×30	Leather	Yes
Arabic Qurʾān	247×195×40	Leather	Yes
L-14029	200×160×50	Vellum	No
Aljamiado 11/9399 (<i>olim</i> T2)	86×70×17	Leather	No
Hornachos' prayer book	63×70×18	Leather	Yes

Features of Andalusí Bindings

Covers

All but one of the bindings studied are covered in tanned leather, apparently goat or sheep skin, in dark brown or maroon tones. MS. L-14029 from the Malaga Provincial Historical Archive is covered in vellum. This is a re-used document in a thick parchment. The external face is the yellowish hair side, but internally there are remains of a carbon ink script in a very white flesh side.

Four of the codices have some form of decoration: 1) MS. 16 and 2) MS. 20, both from the Sacromonte Abbey; 3) a Qurʾān from the collection of PP. Escalpios, and 4) Hornachos' prayer book from the Extremadura Public Library. In these instances, the decoration on both the upper and the lower covers is blind tooled. The decorative motifs are: for the first example, a central circle is filled with an interlaced pattern, and a similar design borders the upper and lower covers. On the second and third examples, several geometric motifs are tooled to form a central element as well as corner designs, with three double lines around the entire perimeter. The decoration of the last example consists of lattice-patterned rosettes with additional simple lines that extend across the entire cover. In all four cases, the decoration on the envelope flap follows that of the boards.

Fastenings

Of particular note, MS. 20 from the Sacromonte Abbey retains the remnants of leather straps (probably alum tawed) that were laced through the covering material and pasteboards of the envelope flap and upper cover. These straps could have comprised either simple ties or were possibly secured around a

TABLE III *Pasteboard and the number of its layers*

Reference	Boards	Spine	Flap
MS.16	Yes	No	Yes
MS.20	Yes	Yes	Yes
Arabic Qur'ān	Yes	Yes	Yes
L-14029	Yes, 5	Yes	Yes, 5
Aljamiado 11/9399 (<i>olim</i> T2)	Yes	Yes	Yes
Hornachos' prayer book	Yes, 4	Yes, 3	Yes, 4

button fastener. Curiously enough, the envelope strap is laced underneath the leather turn-ins. This suggests that it was probably laced during the manufacture of the binding, though it is theoretically possible that it was added at a later date. Given that these strap remnants are found on just one binding, any conclusions about how they were used and when they were added should be made with a degree of caution.

That said, it is worth mentioning that al-Ishbīlī describes lacing straps onto bindings in instances when the flaps are too short and liable to yawn.²⁰ Such ties fastened the flap shut around the exterior of the upper cover. It is possible that this feature resulted from the influence of contemporary Christian Iberian limp vellum bindings with a similar exterior envelope flap. Such a construction is in contrast to other Islamic binding traditions, with the exception of that of West Africa, in which the envelop flaps do not have any such straps and are typically tucked below the front cover when the book is closed.

Flap Placement

One particular feature that stands out in the case of the Hornachos manuscript—possibly the latest of the entire group that we studied—is that the fore-edge and envelope flaps are attached to the upper cover, similar to Christian envelope bindings. This is despite the fact that it is an Arabic script text that was typically bound with the flap attached to the lower cover. Since this manuscript was produced roughly a century after the banning of Islamic books in Spain, it may explain the unusual placement of this particular envelope flap.

²⁰ Abbādī, *Las artes del libro en al-Andalus*, p. 109.



FIGURE 5 MS. 16 Sacromonte Abbey with its original binding, previous restoration treatment
PHOTOGRAPHY: TERESA ESPEJO ARIAS

Pasteboards

As is commonly found on Islamic envelope bindings, the boards are typically made of laminated pasteboard. The number of layers of paper is dependent upon the size of the book in question, and whether they are used for the front, back, and fore-edge or envelope flap of the cover. Both the boards and the envelope flaps are comprised of the same number of layers of paper, while the spine strip and fore-edge often have fewer layers. The binding of MS. 16 (Sacromonte Abbey) is the only one studied that lacks a spine strip.

Textile Material

The fabric used for the internal lining of the binding is comprised of taffeta, made of linen, cotton, or hemp. In all cases we analysed the fibres using optical microscopy, scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). No examples of silk were found. This contrasts with the materials traditionally used for other styles of Islamic binding, where leather, paper, or silk were used for the doublures. In the case of MS. 16 and L-14029 its fabric is dyed indigo blue,²¹ and yellow for MS. 20. [fig. 5]

21 Teresa Espejo Arias et al., "A Study about Colour in the Collection of Arabic Manuscripts

TABLE IV *Paper features*

Reference	Laid lines	Mould	Watermark
Ms. 16	Yes	Wire	Yes
Ms. 20	No	Vegetal	No
Arabic Qur'ān	No	Vegetal	No
L-14029	No	Vegetal	No
Aljamiado 11/9399 (<i>olim T2</i>)	Yes	Wire	Yes
Hornachos' prayer book	Yes	Wire	Yes

Paper

Two distinct types of paper used for the text blocks were observed. The first type displays characteristics consistent with “Arab” paper, where the soft and inconsistent impressions of the flexible paper moulds made from reeds or stems of other plants are observed. Vertical chain lines are often evenly spaced apart from one another in groups of two, three, or four, while perpendicular laid lines often incline to one side or the other. The second type of paper is made with a rigid wire mould in the European manner. In these papers, the laid and chain lines are clearly visible, and the pulp is highly refined so it is unusual to find remains of fabric or big fibres. We can also observe wire watermarks.

Fibre

While linen, cotton, and hemp fibres were used for the pulp of the “Arab” paper, the second type of European paper was made with a mix of linen and cotton fibre. The same fibres were found on the associated pasteboards. Similar combinations were also found in the fabric used to line the boards, with the exception of the Qur'ān from the P.P. Escolapios Library, which was made of hemp.²² It is important to note that cotton was used for both the paper pulp and the fabric lining of MS 20, and it is possible that Italian methods had some influence on papermaking techniques in al-Andalus during the beginning of the 14th century.

in the Sacromonte Abbey, Granada, Spain. A New Methodology for Chemical Analysis” in *Restaurator*, 29, no. 2, 2008, pp. 76–106.

22 Teresa Espejo et al., “Microscopic and Spectroscopic Techniques for the Study of Paper Supports and Textile used in the Binding of Hispano-Arabic Manuscripts from Al-Andalus: A Transition Model in the 15th century” in *Journal of Cultural Heritage* 11, No. 1, 2010, pp. 50–58.

TABLE V *Fibre analysis*

Reference	Text block	Pasteboard	Fabric (Warp/ weft)
Ms. 16	Linen and cotton	Linen and cotton	Linen / cotton
Ms. 20	Linen and cotton	Linen and cotton	Linen / cotton
Arabic Qurʾān	Linen or hemp	Linen or hemp	Hemp/hemp
L-14029	Linen	Linen and cotton	Linen / cotton
Aljamiado 11/9399 (<i>olim</i> T2)	–	–	–
Hornachos' prayer book	–	–	–

TABLE VI *Collation*

Reference	Folia	Structure	Quires	Composition	Added Folia	Anomalies
Ms. 16	245	Regular	26	Quinion	Yes	Yes
Ms. 20	48	–	–	–	–	–
Arabic Qurʾān	108	Regular	11	Quinion	No	No
L-14029	112	Alternate	24	Singulion, Quaternion	Yes	Yes
Aljamiado 11/9399 (<i>olim</i> T2)	65	Irregular	6	Quinion, Sextenion, Septenion	Yes	Yes
Hornachos' prayer book	111	Irregular	3	–	No	Yes

Collation

The quires were formed of groups of bifolia to which single leaves were sometimes added depending on the requirements of the copyist or binder. Table VI outlines the collation in general terms, without entering into the particular details of each manuscript. Unfortunately MS. 20 has several pages with some areas adhered to each other and opening could cause more damage. We decided to postpone the study of the quires structure until necessary conservation treatment is done to allow for safe handling of the manuscript.

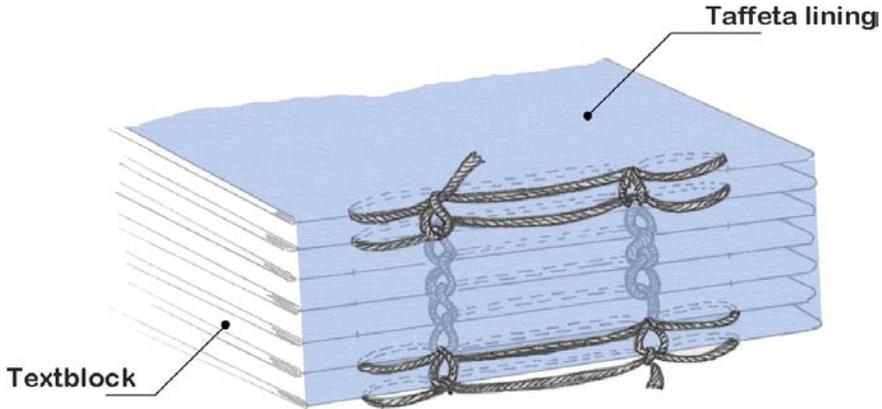


FIGURE 6 *Sewing diagram of the “Andalusí” binding*
ORIGINAL DRAWING: AUTHORS

Sewing

As previously mentioned, the sewing constitutes the core of the binding structure, and single-thread kettle stitching was observed on all of the examples studied. While this is a common form of sewing encountered on Islamic bindings, the Andalusí structure presents us with a unique variation, in that the first and last quires are stitched together with the fabric lining using an additional long stitch.²³ Of the manuscripts studied, MS. 16, the P.P. Escolapios Qur’ān and L-14029 from Malaga display this type of sewing. Although MS. 20 has lost part of its original sewing, despite its poor condition there were sufficient remnants of thread to enable us to discern the model of sewing that had been employed. [fig. 6]

The latest manuscripts, from the 16th century, Hornachos and T2, display particular features worthy of special mention. The sewing method of the former is rough and messy, based on pulling together the three thick quires with a blue thread that does not connect to the fabric lining. In this case, the fabric is connected to the text block by the end band sewing. T2 is sewn with one thread, on two leather supports, which perforate the fabric lining and thus link the body of the book to the cover.

23 Al-Malik al-Muẓaffar Yūsuf b. ‘Umar, *Kitāb al-Mukhtara’ fī funūn min al-ṣun‘*, in Abbādī, *Las artes del libro en al-Andalus*, p. 90.



FIGURE 7 *MS. Hornachos, end band detail*
PHOTOGRAPHY: AUTHORS

End Bands

In the case of codex T2 and the Hornachos manuscript, sufficient remnants survive that enable us to reconstruct the secondary end band sewing, which were two-coloured chevron patterns, in the typical Islamic style. The ends of the leather cores are adhered to the exterior of the fabric, which was then covered up; in other words, either sandwiched between the fabric and the pasteboard or the fabric and the covering material. [fig. 7]

MS. 20 revealed fragments of red and yellow silk used for the secondary sewing but not in sufficient quantities to enable reconstruction. Meanwhile, in MS. L-14029, the remains of a possible warp of blue thread could be discerned.

Other bindings retain only of part of the underlying primary sewing and, in some instances, only the presence of sewing holes through the fabric remain at the head or tail. It seems likely that these examples were also executed in the typical Islamic fashion, even though no silk threads of the secondary sewing remain to confirm the embroidered weft. In all cases, this evidence is sufficient to prove that the thread passed through both the fabric and pasteboard spine piece. It also indicates that the end band sewing must have been completed after the text block was sewn, so as to mechanically connect the spine piece

with the fabric lining, thereby reinforcing the sewn board attachment connecting the text block to the cover.

Conclusions

A detailed analysis of a group of six manuscripts invites us to conclude that there was a distinct type of Andalusí bookbinding. While the majority date to the 15th–16th centuries, the earliest example from the Sacromonte Abbey Archive in Granada, dates to 1302, and proves that these methods were in use during the Naṣrid period. As we clarified earlier, despite the poor condition of this example, we were fortunate enough to find sufficient remnants to be able to determine the codicological structure of the binding of this manuscript. Moreover, its state of conservation enabled us to observe elements that would have been impossible to identify had the book been rebound. Importantly, at the time of this research (2010) the entire manuscript was the original 14th century example, unrestored and with no signs of subsequent intervention.²⁴ Despite the fact that the research carried out to date has focused on a small number of examples, with different dimensions, structural features, and covering materials, they all consistently share the feature of having a single piece of fabric that covers the spine and inner face of the covers, moreover creating a natural hollow spine. They also bear specific structural similarities, quite distinct from other Islamic traditions, which are reminiscent of contemporary Iberian Christian bindings that were sewn on supports and laced into the boards prior to covering. Altogether, they provide sufficient evidence for a significant variation of Islamic binding that until this Project was carried out had never been documented. By sharing the findings of the present study, the work will assist other researchers in identifying further examples and confirm this hypothesis and other models that differ from what is considered to be traditional Islamic binding.

24 MS. 20. *Kitāb al-Kāfi fī 'l-ṭibb min al-qarn ilā 'l-qadam* of al-'Aynazarbī (d. 702 H / 1302 a.C). See Espejo Arias and Arias Torres, "Addenda", p. 66.