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How al-Andalus wrapped itself in a silk cocoon: the *ṭirāz* between Umayyad economic policy and Mediterranean trade

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Sericulture and the state supervision of textile production was a longstanding tradition in the Middle East during the pre-Islamic period. However, neither were known in the Iberian Peninsula. With the rise of Islam, the luxury fabrics produced by the state institution of *ṭirāz* became a prominent symbol of sovereignty, encouraging the Umayyads of al-Andalus (138 h./756–422 h./1031) to create their own *ṭirāz* workshop, which specialized in silk fabrics, after sericulture was introduced in Iberia under their rule. Little was known about this productive process, as existing studies have tended to focus exclusively on one of the multiple types of evidence available: Arabic, Latin and Hebrew textual sources; chemical, technical and decorative analysis of preserved textiles; and others. This paper uses all the evidence available to undertake a comprehensive study of the operation of the Umayyad *ṭirāz* workshop in al-Andalus. Beginning with the tributary and administrative factors that surrounded the institution, the process by which demand for silk in the Mediterranean markets gave private merchants the instruments to control the Andalusi textile sector is analysed. By the fifth h./eleventh century, al-Andalus had become the main supplier of silk goods in the Mediterranean.

Keywords: al-Andalus; Mediterranean; Umayyad period; textile production; economic policy; trade

Introduction

In the centuries that followed the rise of Islam, the most important symbols of sovereignty were the ability to make luxurious *ṭirāz* fabrics and to mint coins, as well as to be honoured by name in the sermon of the *khuṭba*. These three actions were a reflection of the ruler, whose name was printed on textiles and coins, and mentioned in invocations, as a clear

indication of his authority.[1] The state-coordinated workshops where *ṭirāz* fabrics were produced were also referred to simply as *ṭirāz*. State supervision of textile production was a longstanding tradition in the pre-Islamic Middle East; both Byzantines and Sasanians had imperial workshops to process the silk, linen and cotton that was grown within their borders. The institutionalization of the *ṭirāz* under the Umayyads, Abbasids and Fatimids was, therefore, strongly influenced by this tradition.[2]

The initial conditions in al-Andalus, however, were quite different from those in the Mashriq. During the Visigothic period, both state-controlled textile production and sericulture were unknown in the Iberian Peninsula. Initially, after the Arab conquest of 92 h./711, which began a long period of Umayyad rule, al-Andalus was merely a province of the expansive caliphate of Damascus. After the fall of the Umayyad caliphate in the mid-second h./eighth century, a member of the dynasty, ʿAbd al-Raḥmān I, fled to al-Andalus, where he created an autonomous emirate in 128 h./756. Over time, the success of the new state enabled it to establish itself as an Andalusi caliphate, still under Umayyad rule, between 316 h./929 and 422 h./1031.

The lack of a local tradition of political involvement in the textile sector did not discourage the Andalusi Umayyads from creating their own *ṭirāz* workshop to compete on the Dār al-Islām scale, a distinction to which few Muslim rulers – usually only caliphs – could aspire. In addition, while Abbasid and Fatimid workshops normally worked with linen and cotton, and silk was only used for embroidering inscriptions, and occasionally as warp threads,[3] the Andalusi *ṭirāz* focused on silk, after sericulture was introduced in the Iberian Peninsula under the Umayyads. According to the Geniza records, by the fifth h./eleventh century, al-Andalus had become the main supplier of raw silk and silken fabrics across the Mediterranean.[4] This article examines the tributary, administrative, diplomatic and commercial dynamics that brought about the consolidation of the Umayyad *ṭirāz* of al-Andalus, as well as the features that made it distinct from other textile institutions in the Islamic world.

The *ṭirāz* supply circuit: regional specialization of the countryside

The Umayyad state pursued a deliberate economic policy, in which the administration played a centralizing role, hoarding, transforming and redistributing resources. Eduardo Manzano Moreno already characterized this Umayyad conceptualization of power using two sources from the caliphate period:[5] First, Aḥmad b. Muḥammad al-Rāzī – a midfourth h./tenth-century courtier – describes the economic specialities of different regions in al-Andalus,[6] demonstrating that the Umayyads had a detailed knowledge of the resources available in their dominions;[7] Second, the Calendar of Cordoba – written for caliph al-Ḥakam II (350 h./961–366 h./976) – portrays the Umayyad administration not only as a recipient of tax, but as an active player in the coordination of many of the productive processes described.[8]

The production of luxury fabrics was among the economic sectors most tightly controlled by the Umayyad state through the *ṭirāz*. In fact, the analysis of the raw materials demanded by this textile institution suggests that regional economic specialization was promoted by the state. Silk, a filament produced by a larva that feeds on mulberry leaves, provides the clearest evidence in this regard during the Umayyad period. Before the Arab conquest, sericulture

was unknown in the Iberian Peninsula, but the Umayyad *ṭirāz* workshop was demanding Andalusi silk from the third h./ninth century, if not earlier.

Raw material	**Arabic name**	**Scientific name**	**Textile use**	**Origin**
Sea silk	Ṣūf al-baḥr	Pinna nobilis	Fiber	Coast near Santarém
Silk	Ḥarīr	Bombyx mori	Fiber	Province of Ilbīra (near Sierra Nevada)
Flax	Kattān	Linum usitatissimum	Fiber	Province of Ilbīra (near Sierra Nevada)
Wool	Ṣūf	Caprinae	Fiber	Al-Andalus
Gold	Dhahab	Aurum	Metal thread	Western Sub-Saharan Africa
Silver	Fiḍḍa	Argentum	Metal thread	Al-Andalus
Pine marten	Sammūr	Martes martes	Fur	Region of Tudela
Safflower	ʿUṣfur	Carthamus tinctorius	Orangey dye	Provinces of Ilbīra, Niebla and Seville
Kermes	Qirmiz	Kermes vermilio	Crimson dye	Provinces of Niebla, Seville, Sidonia and Valencia
Woad	Ṣibāgh samāwī	Isatis tinctoria	Blue dye	Region of Toledo
Madder	Fuwwa	Rubia tinctorum	Red dye	Al-Andalus
Sumac	Summāq	Rhus coriaria	Brownish dye	Al-Andalus
Weld	Layrūn	Reseda luteola	Greenish yellow dye	Al-Andalus
Persian berry	Nabaq	Rhamnus saxatilis	Greenish yellow dye	Al-Andalus
Murex purple	Birfīr	Murex	Purple dye	Byzantine Empire
Barilla	Ghāsūl	Aizoon hispanicum	Bleacher	Al-Andalus

Table 1. Raw materials of the Umayyad *ṭirāz* workshop at al-Andalus.

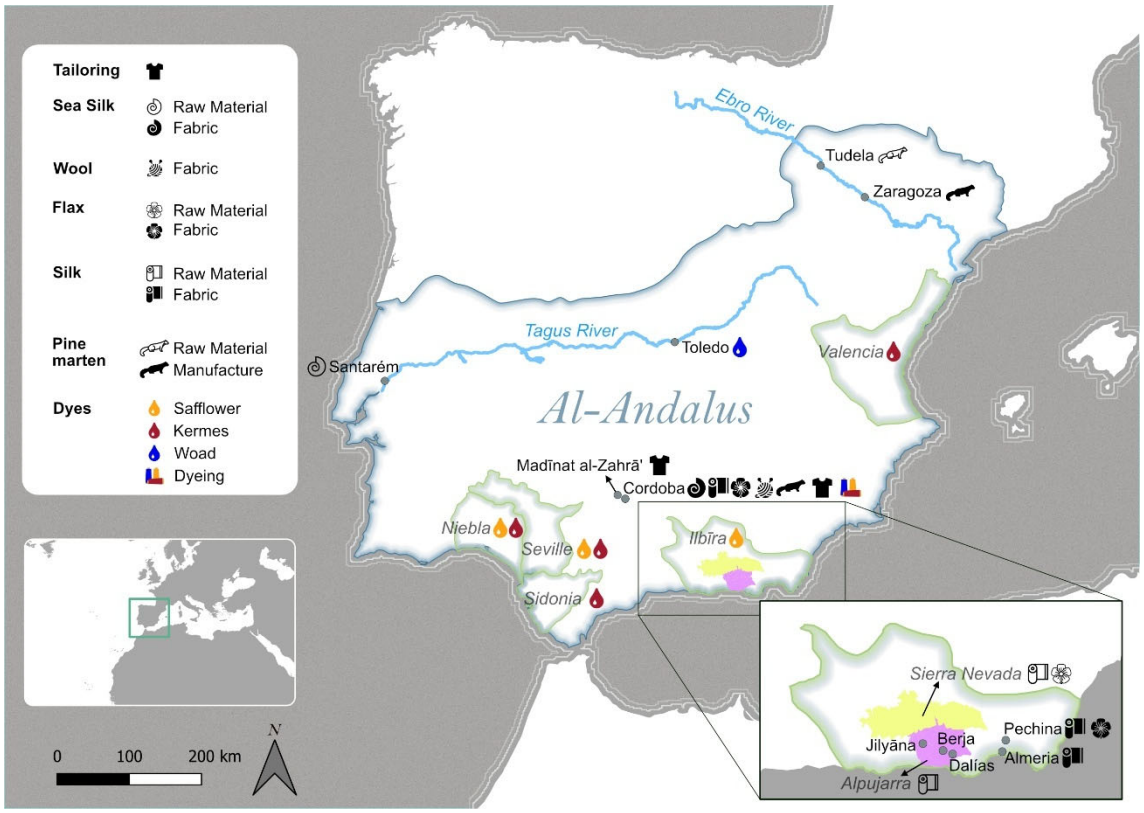

Figure 1. Location in al-Andalus of the textile raw materials and workshops.

The written sources allow us to establish the main silk-producing area in al-Andalus (Table 1, Figure 1). The geographer al-ʿUdhrī states that, already during the Emirates of al-Ḥakam I and ʿAbd al-Raḥmān II (180 h./796–238 h./852), the province (*kūra*) of Ilbīra – roughly spanning the modern provinces of Granada and Almeria – provided the Umayyad tax collectors with 2000 pounds (*arṭāl*) – 1008 kg – of silk (*ḥarīr*) per year.[9] Later testimonies yield more precise information concerning where in Ilbīra silk was grown; the mid-fifth h./eleventh-century geographer al-Bakrī claims that the rural local ities (*qurā*) around Sierra Nevada produced the best quality silk[10]; and, in the mid-sixth h./twelfth century, the geographer al-Idrīsī points out that there were 600 *qurā* that grew silk in the Alpujarra.[11] Therefore, the periphery of the mountain range of Sierra Nevada, which includes the Alpujarra, was an important region for breeding silkworms. Tax payments in silk as early as the emirate period were already mentioned by al-ʿUdhrī. The Calendar of Cordoba provides a more detailed account for the caliphate period: women began incubating the eggs of silkmoths in February, and they hatched in March, while tax collectors turned up to gather the silk for the *ṭirāz* workshop in May and August.[12]

It is remarkable that silk became widely used by the Umayyad *ṭirāz*. The written records suggest a close relationship between silk and the Umayyad dynasty. Indeed, the emirs (and later the caliphs) were very partial to this material. For instance, ʿAbd alRaḥmān II had rainproof clothing made of prime-quality silk (*mamāṭir al-khazz*).[13] This preference had a symbolic aspect: for example, when a distant relative of caliph ʿAbd alRaḥmān III asked to

be appointed heir to the throne, the ruler responded that "prime silk (*ḫazz*) is not like burlap (*ḫaysh*)",[14] clearly referencing the sole right of the ruling line to sovereignty.

The introduction of sericulture in the foothills of Sierra Nevada required a good deal of planning, beginning with the introduction of two new species to Iberia, the silkworm and the mulberry tree. Maurice Lombard and Vincent Lagardère link the introduction of these species to the Syrian army (*shāmiyyūn*), which settled in al-Andalus in 125 h./ 743.[15] Though plausible, the implications of this connection warrant further investigation. Syrian troops were stationed in rural areas in southern al-Andalus, collecting tax on agricultural property and production (*ḫarāj*).[16] In order to do this, the Syrians established a new administrative system based on the *qurā*. The word *qarya* – singular of *qurā* – is usually translated as "village", but originally it was a basic territorial unit of rural taxation. This unit was, therefore, the residence of a Syrian soldier, who collected taxes from the inhabitants of his *qarya*. The written record attests that the region of the Alpujarra, in the southern foothills of Sierra Nevada, was organized by Syrian soldiers into *qurā* after 125 h./743, and the name of three of these fiscal units are known: Jilyāna (Murtas), which was led by clients (*mawālī*) of the Umayyads; Dalías, led by the ʿUdhra, an Arabic group of Umayyad protégés (*ṣanāʾiʿ*); and Berja, governed by the Arabic lineage of the Banū Ḥassān.[17]

Based on this, my interpretation is that, after the emirate was established in 138 h./ 756, the state was the main driver behind the introduction of sericulture in the area, with the assistance of the network of Syrian soldiers in charge of the *qurā*. The significant demand for silk posed by the *ṭirāz* workshop turned the introduction of sericulture into a top priority for the new emirs. In this strategy, their Syrian deputies, already in charge of overseeing agricultural output for taxation purposes, very likely played a role in the arrival of certain products to the *qurā* – including silkworms and mulberry trees – following the emir's priorities. Conditions in the Alpujarra were eminently suitable for the introduction of sericulture due to the early presence of a network of Syrian state agents, some of whom also belonged to the patronage networks of the ruling family. Once silkworms were introduced, the soldiers supervised production for fiscal purposes. As such, the economic policy of the Umayyads used fiscal pressure to incentivize farmers to grow products, including silk, which, in turn, cemented their power.

Specialized production in the periphery of Sierra Nevada included other textile fibres for the Andalusi *ṭirāz* workshop, such as linen. This material was obtained from flax, which was widely grown in the Iberian Peninsula long before the Arab conquest.[18] However, Aḥmad Al-Rāzī reports that the best Andalusi linen came from the province of Ilbīra.[19] Later, Al-Bakrī gives further details, attesting that the best linen (*kattān*) came from the *qurā* around Sierra Nevada, and claims that its quality surpassed that of Fayoum,[20] an area in northern Egypt famous for the production of linen fibre and fabric.[21] It is likely that dyes for the Umayyad *ṭirāz* workshop, such as safflower, were also produced in the periphery of Sierra Nevada; this plant yielded an orangey dye[22] and was grown in the province of Ilbīra.[23] According to al-ʿUdhrī, during the Emirates of alḤakam I and ʿAbd al-Raḥmān II (180 h./796–238 h./852), Ilbīra yielded 2000 pounds (1008 kg) of safflower (*ʿuṣfur*) for the tax warehouses each year.[24] Although the geographer does not give the exact area where this safflower was grown within the province, Andalusi agronomists recommended sowing it next to flax in irrigated land,[25] and it is very likely that the safflower from Ilbīra was grown next to flax on the foothills of Sierra Nevada.

All of this suggests that the Umayyad state had earmarked the foothills of Sierra Nevada for the specialized production of the raw materials demanded by the *ṭirāz* institution. It is likely that, as with silk, the cultivation of linen and safflower was incentivized with the aid of the Syrian military contingents in their role as tax collectors. The fiscal payments in silk and safflower are registered in the records. The choice of this area is explained by the ideal environmental conditions – the silk and linen obtained there were of excellent quality – and by the strong presence of the state apparatus.

The Umayyad administration had the will and the ability to create state monopolies over valuable and scarce textile products, such as sea silk (*ṣūf al-baḥr*), a filament extracted from pen shells.[26] According to the geographer al-Iṣṭakhrī, in the early fourth h./tenth century this fibre, which was very soft and golden, was found in the coast near Santarém (now in Portugal). The *ṭirāz* workshop made textiles from sea silk which, occasionally, were worth as much as 1000 dinars, owing to the extreme rarity of this material. For this reason, the government forbade these fabrics to be traded outside state control.[27] Other textile fabrics used by the Umayyad *ṭirāz*, such as wool, were much more abundant, so the degree of control imposed by the state was accordingly looser, and it is unclear if they were even taken as fiscal payment.

Concerning the dyes and bleaches used in the Umayyad *ṭirāz* workshop, the written record clearly states that they were used to pay taxes in kind, as with the example posed by safflower given earlier. The mid-fourth h./tenth-century calendar of Cordoba indicates that the Umayyad administration ordered tax collectors to gather kermes (*qirmiz*), woad (*ṣibāgh samāwī*), madder (*fuwwa*), and barilla (*ghāsūl*) for the *ṭirāz* factory.[28] Kermes is an insect that yields a crimson dye, the production of which al-Bakrī locates in the provinces of Niebla, Seville, Sidonia, and Valencia; woad is a plant used to produce blue dye, and al-Bakrī reports that it was harvested in Toledo[29]; unfortunately, there is no precise data on the provenance in al-Andalus of madder, a plant used to produce red dye; nor of barilla, a plant with bleaching properties.

Some of these dyes have been identified in the analysis of surviving examples of Umayyad fabrics from the *ṭirāz* workshop, dated to the caliphate period.[30] The first item is the Veil of Hishām II (Real Academia de la Historia, no. 749), which bears an inscription that demonstrates that the piece was made on behalf of that caliph (366 h./976–403 h./1013), and its origin in the Umayyad *ṭirāz* factory is, therefore, beyond all reasonable doubt (Figure 2).[31] The second item, known as the Pyrenees Tapestry Band (Instituto Valencia de Don Juan, no. 2071), bears vegetal and geometric motifs characteristic of material culture in the Umayyad caliphate workshops.[32] Chemical analyses reveal that the red colour was obtained from kermes and madder (see above) while the indigo blue may have been obtained from woad. Brownish colours, on the other hand, were provided by tannins, for instance from the sumac fruit (*summāq*), the harvesting of which in al-Andalus is also attested by the Calendar of Cordoba.[33] Finally, greenish yellow colours were obtained either from weld or Persian berry, both of which were well-known crops in al-Andalus. Other colours were the result of mixing these primary dyes.

Figure 2. Veil of Hishām II (Real Academia de la Historia, no. 749).

Figure 3. Detail of the Veil of Hishām II.

Together, all this information shows that the fiscal circuit allowed the Umayyad administration to centralize the hoarding of most of the raw materials used in the *ṭirāz* workshop. This circuit included the earmarking of agricultural areas for the specialized production of certain goods in the south of the Iberian Peninsula, that is, the region over which the Umayyad administration held a tighter political grip, owing to the presence there of Syrian troops: the province of Ilbīra in the southeast – silk, linen and safflower – and the provinces of Seville, Niebla, and Sidonia in the southwest – safflower and kermes. The circuit also extended to areas further north: the coast of the Lower March (*al-Thaghr al-Adnà*), along

the lower Tagus River, near Santarém, provided sea silk; Toledo, the capital of the Middle March (*al-Thaghr al-Awsaṭ*), along the upper Tagus River, supplied woad; and, to the east, on the Mediterranean coast, the province of Valencia yielded kermes.

The fiscal circuit took over many raw materials used in the textile industry, especially those that were particularly valuable for their rarity or fineness. However, the fact stands that most of the available texts are largely reliant on administrative records, which focus on describing the distribution of commodities in which the Umayyads had a direct interest; and, in fact, other evidence suggests that the actual distribution of goods was more complex than this, even in connection with silk, which held such a prominent position in the symbolic projection of Umayyad power. Certainly, not all the silk harvested ended up in the state warehouses: the chronicler ʿĪsā b. Aḥmad al-Rāzī reports that before ʿAbd al-Raḥmān II's emirate – which began in 206 h./822 – people from alAndalus sold silk (*ḥarīr*) and linen (*kattān*) to North Africa.[34]

In addition, not all the silk making its way to the *ṭirāz* workshop came from the tributary supply system. Ibn Khaldūn claims that no Andalusi ruler ever received a gift like vizier Aḥmad b. 'Abd al-Malik b. Shuhayd's to caliph ʿAbd al-Raḥmān III in 327 h./939,[35] which included fabrics for the caliph's personal wardrobe: 30 pieces of silk sealed and embroidered with gold threads (*ḥarīr mukhattam marqūm bi-l-dhahab*), similar to the garment (*libās*) that the ruler usually wore; 5 tunics (*ṭahāʾir*); 6 silk mantles from Iraq (*maṭārif ʿirāqiyya*); and 48 mantles (*malāḥif*) for the daytime and 100 night gowns. Similarly, there were various items of fur: 7 or 10 Blanford's fox-fur coats from Khorasan (*firāʾ al-fanak al-khurāsāniyya*) and 100 pine-marten pelts (*julūd al-sammūr*). Apart from the clothing, the gift included 4000 pounds (2016 kg) of silk thread (*ḥarīr maghzūl*) and 1000 pounds (504 kg) of dyed silk (*lawn al-ḥarīr*). The silk thread and dyed silk were not given directly to the caliph but sent straight to the director of the *ṭirāz* institution, who duly annotated the delivery in his record book (*daftar*). The very large quantities of silk involved reveal just how much silk was being cultivated outside the fiscal circuit.

The productive circuit of the *ṭirāz*

Centralizing the institution from Cordoba

The fiscal circuit in place allowed the Umayyad *ṭirāz* institution to centralize the hoarding of the raw materials that it required for production. The textile workshop was set up shortly after the foundation of the Cordoba emirate in 138 h./756. ʿĪsā al-Rāzī states that ʿAbd al-Raḥmān I himself established the *ṭirāz* institution, which, under the first three Umayyad emirs, remained a small-scale operation.[36] These limitations did not prevent it from producing silk fabrics, since, as noted above, it is attested that silk fibres were subject to taxation in kind in the province of Ilbīra from the government of the third emir, al-Ḥakam I (180 h./796–206 h./822), if not earlier.

The Andalusi *ṭirāz* institution was established on a firmer footing during the emirate of the fourth Umayyad ruler, ʿAbd al-Raḥmān II (206 h./822–238 h./852), following his far-reaching reforms to adapt the Umayyad administration to the Abbasid model. The splendour of the Baghdad caliphate relied on a complex, specialized, multi-layered state structure,

within which the *ṭirāz* played an essential role, as different fabrics gave expression to the relationships between superiors and subalterns.[37] As such, the handing of *ṭirāz* fabrics to administrative subalterns became an almost daily ceremonial practice, the members of the Abbasid circle of power being recognizable as the wearers of robes of honour (*aṣḥāb al-khilʿa*), that is, *ṭirāz* textiles.[38]

ʿAbd al-Raḥmān II tried to emulate this model in al-Andalus. According to Aḥmad and ʿĪsā al-Rāzī, the ruler took two main measures: first, he established an official Umayyad court protocol (*rusūm*); and, second, he increased the production of the *ṭirāz* in Cordoba and other locations in al-Andalus, which produced excellent garments (*kisa*) and carpets (*waṭaʾ*). The emir also set up a state salary (*rizq sulṭānī*) for the officials in charge of coordinating the workshops,[39] in what was a momentous step for the institutionalization of the Andalusi *ṭirāz*, which thus became an integral component of the Umayyad administration.

The paid staff were led by the director of the *ṭirāz* institution (*ṣāḥib al-ṭirāz*). The first two directors mentioned in the written sources worked under the emirs ʿAbd alRaḥmān II and his son Muḥammad I (206 h./822–273 h./886). Their families were frequently rewarded for their loyalty to the Umayyads with prominent administrative posts.[40] Four other directors are also known, all of whom were *fityān* – servants of the private estate of the ruler – and they managed the *ṭirāz* during the fourth h./tenth century.[41] The administration of the textile institution never left the innermost circle of the ruler, which is a clear indication of its importance for the Umayyads.

The director was assisted in his task by an intendant (*amīn*) and a secretary (*kātib*), both mentioned by ʿĪsā al-Rāzī in 361 h./972. These management officials ruled the institution from the state-run *ṭirāz* workshop (*dār al-ṭirāz*) in Cordoba. Other staff members working there included managers of the agents (*quwwām min al-wukalāʾ*) – the agents probably oversaw logistics and transport between the *ṭirāz* mills – and manufacturing managers (*quwwām bi-l-aʿmāl*), which were likely in control of workshop activity. These middle management cadres had the opportunity to greet al-Ḥakam II during the caliph's inspection visit to the *dār al-ṭirāz* in 361 h./972. The account of this visit suggests that the state-run textile workshop was located outside the city (*madīna*) walls, to the north of Cordoba.[42] This matches the information yielded by the Calendar of Cordoba, which points out that the city had a suburb for the *ṭirāz* (*vicus atirez/ tiraceorum*).[43]

The most luxurious type of fabric turned out by the Umayyad *ṭirāz* workshop combined silk and precious metal threads. This was the material used in the two surviving items of clothing described earlier, the Veil of Hishām II and the Pyrenees Tapestry Band, both of which are taffetas with silk warp and weft. The decorative bands are made with tapestries of dyed silk and metal threads.[44] The written record also suggest that Umayyad workshops produced textiles with silk and metal threads. The geographer Yāqūt points out that, under the Umayyads, Cordoba was renowned for its *washy* and *dībāj*,[45] two types of decorated silk fabric, often containing metal threads.[46] Although Yāqūt does not say explicitly that these were produced by the Umayyad *ṭirāz* workshop, chronicler Ibn Ḥayyān claims that emir ʿAbd al-Raḥmān III used washy from the *ṭirāz* as a gift in 303 h./915–916.[47] Meanwhile, it is likely that the *dībāj* also came from there because it was a common feature in robes of honour presented by the caliph.[48] As previously pointed out, it was usual for the ruler himself to don clothes of gold-embroidered silk fabric.

Prime silk (*khazz*) is the type of fabric that sources most often associate with the Umayyad *ṭirāz* institution. The mid-fourth h./tenth-century geographer Ibn Ḥawqal was of the opinion that the *khazz* produced for the Umayyad state (*sulṭān*) was superior to that made for the Abbasids in Iraq, including a waterproof waxed type (*mushamma*ʿ). This author also mentions other types of textiles woven for the Umayyad *sulṭān* – therefore, they were productions of the *ṭirāz*. First, there were the linen (*kattān*) fabrics, which came in two types, one which was closely woven (*ṣafīq*) and another that was very loosely woven (*daqīq*), called *sharb*. Both of these were compared by Ibn Ḥawqal to those made, respectively, in Dabiq and Shata,[49] two towns in the Nile Delta which were renowned for their linen textiles.[50] As such, Andalusi linen fabrics, like the flax harvested in Sierra Nevada, soon became famous for their quality across the Mediterranean. Second, Ibn Ḥawqal mentions that sometimes wool felts (*lubūd*), which he describes as the best in the world, were also made for the Umayyad state.

At its peak, the output of the Umayyad *ṭirāz* workshop was very substantial. The chronicler Ibn ʿIdhārī's account of the campaign waged by al-Manṣūr – the famous chamberlain (*ḥājib*) of caliph Hishām II – against Santiago de Compostela in 387 h./997 provides some evidence for this. After the expedition, al-Manṣūr discharged his Christian allies from northern Iberia as well as their soldiers, after rewarding them with garments that reflected their rank (*aqdār*). The chamberlain gifted the following pieces to the Christian and Muslim warriors who had served him so well: 2285 *khazz* fabrics from the *ṭirāz*; 21 outfits of sea silk (*ṣūf al-baḥr*); 15 feathered textiles (*murayyashāt*); 11 *siqlāṭūn*; 7 chair blankets (*anmāṭ*) of *dībāj*; 2 vestments perfumed with grey amber (*ʿanbar*); 2 Blanford's fox-fur coats (*firāʾ al-fanak*); and 2 fabrics of Byzantine (*rūmī*) *dībāj*.[51] This account provides valuable information about two central aspects of the Andalusi *ṭirāz* workshop. First, it was equipped to produce on a large scale, given that it might have to make more than 2000 pieces to be given away after a single campaign; furthermore, it could produce a wide variety of different types of textiles. The value of each piece expressed the recipient's rank within the Umayyad power structure, as emphasized by Xavier Ballestín.[52]

The types of workshops at the ṭirāz

The sheer range and quantity of textiles produced suggests that the *ṭirāz* institution included the simultaneous operation of multiple workshops. There is some evidence that the *ṭirāz* coordinated both state-owned and private workshops, in a way akin to textile institutions in other Mediterranean polities, such as the Byzantine, Abbasid, and Fatimid empires.[53] In Cordoba, most private textile activity took place in the Main Souk (*Sūq Kubrā*), which was outside the south-western wall, near the Umayyad palace (*qaṣr*).[54] The *ḥisba* treatise written by Ibn ʿAbd al-Raʾūf around 317 h./929–930, points out that activity in the souk included treating pelts (*julūd*), fur coats (*firāʾ*) and leather (*julūd madbūgha*); selling dyes (*aṣbigha*); spinning linen (*kattān*) yarn; and weaving multiple types of fabric, like *dībāj*, prime silk (*khazz*), silk (*ḥarīr*), fabrics combining silk with other fibres (*mulḥam*),[55] low-quality silk (*qazz*), linen (*kattān*), and wool (*ṣūf*).[56]

Except for the *qazz*, all the textiles sold at the souk were also produced by the *ṭirāz*. Some, like *dībāj*, were very expensive, as they combined silk and metal threads – gold, the precious metal most often used for threads, was rare in al-Andalus, and had to be imported from

western sub-Saharan Africa[57] – both of which often featured in the caliph's own garments. It is likely that the *ṭirāz* institution bought *dībāj* and other fabrics in the souk, in order to complement its own production and ensure that the needs of the administration were met. In fact, the wool felts mentioned earlier, which were only required by the Umayyad state on specific occasions, clearly indicate that the *ṭirāz* occasionally commissioned private workshops, which the rest of the time relied on selling their wares to private customers. The location of the souk next to the Umayyad palace suggests that it was there to cater for the demands of the rulers. This does not mean that other urban groups did not frequent the souk: Ibn Ḥawqal describes the finest *kattān, khazz* and *qazz* worn by wealthy Cordobans in the mid-fourth h./tenth century,[58] all of which were available at the souk.

Regarding the state-owned factories of the Umayyad *ṭirāz* institution, the chronicler ʿĪsā al-Rāzī indicates that in 364 h./974 the servants of the state-run *ṭirāz* workshops (*aʿwān dūr al-ṭirāz*) were present in a ceremony held at Madīnat al-Zahrāʾ, the palatine city built by the caliphate seven kilometres west of Cordoba.[59] The fact that these workshops are mentioned in the plural probably means that there were several state- controlled production areas throughout Cordoba, or else that they were split between there and Madīnat al-Zahrāʾ.

According to Ibn Ḥayyān's chronicle, one state workshop was above all others in importance: the ruler's own mill, or *ṭirāz khāṣṣ*, which produced the vestments worn by the emir or caliph and a very small number of his closest representatives. We know of three instances in which the caliph gave gifts from this workshop to allied Berber rulers in the Western Maghreb. In 322 h./934, caliph ʿAbd al-Raḥmān III presented one of these chieftains with 25 pieces from the *ṭirāz khāṣṣ*: 5 Iraqi ʿubaydids,[60] 10 pieces from other *ṭirāz* workshops, 3 pieces of sea silk (*ṣūf al-baḥr*), 2 garments made in Zaragoza (*saraqusṭiyyūn*), and 5 turbans (*ʿamāʾim*).[61] The ʿubaydid textiles of Iraqi origin illustrate that the *ṭirāz khāṣṣ* could acquire semi-finished pieces from other producers and finish them. In this sense, it is likely that the 10 pieces from other *ṭirāz* mills, and the two from Zaragoza, had been brought to the *ṭirāz khāṣṣ* for completion.

A second Berber chieftain who benefitted from the generosity of ʿAbd al-Raḥmān III received 10 pieces of ʿubaydid prime silk (*khazz*) from the ruler's personal workshop in 317 h./930. The caliph ordered the pieces to bear the name of the recipient in embroidery (*muṭarraz*). According to Ibn Ḥayyān, this honour had never before been bestowed on any subject in all of Dār al-Islām, as it was an exclusive privilege of the ruler.[62] This account reveals that the ʿubaydid fabrics from Iraq were, at the very least, finalized in the *ṭirāz khāṣṣ* – in this case by adding embroidery. The Umayyad administration included a head tailor (*ʿarīf al-khayyāṭīn*), known to have been working in Madīnat al-Zahrāʾ – the then residence of the caliph – in 360 h./971.[63] It is very plausible that this official's duties included supervising the tailoring of the ruler's personal *ṭirāz*. Hence, it can be argued that the *ṭirāz khāṣṣ* was physically close to the ruler himself – most of the time in his Cordoban palace and, around the mid-fourth h./tenth century, in the palatine city of Madīnat al-Zahrāʾ – and that it specialized in finishing up and decorating half-made fabrics for the ruler and his closest circle.

Ibn Ḥayyān reports a third gift from the caliph to a Berber leader in 324 h./936, including fabrics that might have come from three types of *ṭirāz* workshops. The recipient was given 20 pieces of ʿubaydid prime silk like the ones the caliph himself wore (*khāṣṣī min kiswat al-*

khalīfa) – finished, therefore, in the *ṭirāz khāṣṣ*; 5 prime silk pieces made by the caliphate's *ṭirāz* (*ṭirāziyya khilāfiyya*), a terminology which appears to refer to the remaining state-owned *ṭirāz* workshops; finally, the chieftain's soldiers received 100 prime silk pieces from *ṭirāz* mills specializing in the production of turbans (*ṣināʿāt ṭirāz al-ʿimāma*).[64] The latter seem to have not come from either the ruler's *ṭirāz* or those of the caliphate, which suggests that they were made by private workshops on commission from the *ṭirāz*. As previously noted, it is likely that private workshops in Cordoba's Main Souk occasionally sold their wares to the *ṭirāz* institution.

This information suggests that the Umayyad *ṭirāz* was made up of three types of workshops: the personal workshop of the ruler; other state-owned workshops; and private mills. As indicated by research into the organization of Byzantine, Abbasid, and Fatimid textile production, the division between different types of workshops suggests the complementary nature of private and state-driven production.[65] In Umayyad al- Andalus, for its part, it seems that workshop specialization closely mirrored the echelons of power which they served. The last of the three examples presented here displays a Berber leader as a worthy recipient of gifts from the state's workshop, while his soldiers could only be given gifts made in a private workshop. This does not necessarily mean that privately made textiles were of inferior quality, but owning a garment from the *ṭirāz khāṣṣ* was a distinct indication of proximity to the ruler, evidence of how much the Umayyads appreciated the services of those who were given them.

The ṭirāz *in specialized regions: Zaragoza*

The increasing complexity of *ṭirāz* production led to the creation of workshops outside the capital. Aḥmad al-Rāzī reports that, after emir ʿAbd al-Raḥmān II consolidated the centralized textile institution in Cordoba, he promoted the creation of *ṭuruz* factories (the plural of *ṭirāz*) in other regions of al-Andalus.[66] Zaragoza was one of the chosen sites for this. As noted earlier, the administration sent Zaragozan garments to the *ṭirāz khāṣṣ*. The mid-fifth h./eleventh-century geographer al-ʿUdhrī describes this garment, claiming that the *ṭuruz* in Zaragoza specialized in combining pine marten (*ṣanʿa al-sammūr*) and fabric (*nasj*), resulting in Zaragozan cloths (*saraqusṭiyya*), which had no parallel anywhere for their excellent finish.[67]

The pine marten is a mammal whose pelt was highly valued. It is included in the list of gifts that vizier Ibn Shuhayd presented to ʿAbd al-Raḥmān III in 327 h./939. According to al-ʿUdhrī's description, the *saraqusṭiyya* garment was a fur coat that was partly woven, or otherwise coated in textile fabrics. The fourth h./tenth-century geographer al-Iṣṭakhrī indicates that pine marten was commonly found in the area (*nāḥiya*) of Tudela,[68] that is, the north-western end of the Higher March (*al-Thaghr al-Aʿlà*), which spanned much of the Ebro Valley. The capital of this march was Zaragoza, so it is unsurprising that the city should specialize in processing these pelts, which were unavailable in other regions of al-Andalus. Once the furs had undergone their first processing in Zaragoza, the administration had them sent to the *ṭirāz khāṣṣ* – in Cordoba or Madīnat al-Zahrāʾ – where they were finished.

Bursting the Umayyad circuit at the seams: from Andalusi economic policy to Mediterranean commercial dynamism

The role of the Mashriq and trade in the configuration of the ṭirāz

The Andalusi fiscal and productive circuit within which the Umayyad *ṭirāz* was framed allowed this institution to produce and deliver a wide variety of fabrics. However, it is important to emphasize that the creation and consolidation of the textile institution was only possible because of the Umayyad state's ability to bring in crops, techniques, and fabrics that were originally foreign to al-Andalus. During the emirate period, two major waves of technological transfer from the Middle East can be attested. The first resulted in the initial creation of the *ṭirāz* institution, after the foundation of the Cordoba emirate in 138 h./756. The introduction of sericulture to al-Andalus at that time involved the arrival of silkworms and mulberry trees, as well as the specialists needed to tend to these species, all of whom came from the eastern Mediterranean.

The second wave of technological upgrading might have begun with the administrative reforms undertaken by ʿAbd al-Raḥmān II (206 h./822–238 h./852), which closely emulated the Abbasid system. A by-product of this reform was the cultural change by which the rulers promoted Abbasid court garments among the Andalusi elite.[69] Both this emir and his son Muḥammad I led by example in this process, acquiring Abbasid luxury fabrics through trade. In the upheaval that followed the military takeover of Baghdad in 198 h./813 – in the context of the dispute for the throne between the sons of the late caliph Hārūn al-Rashīd – many garments (*aksiya*) and carpets (*waṭāʾ*) from the Abbasid treasury reached the hands of sea merchants (*tujjār al-baḥr*), who brought them to the shores of al-Andalus to be bought by ʿAbd al-Raḥmān II. His son, for his part, contacted a Cordoban merchant in textiles (*bazzāz*) who regularly did business in the Umayyad court and sent him to Iraq to approach the director of the Abbasid *ṭirāz* institution. The Umayyad agent paid for the Iraqi *ṭirāz* to secretly produce some pieces with the name of the Umayyad emir embroidered on them, and took them to Cordoba once finished.[70]

We know some details about the biography of an eastern merchant who sailed to al-Andalus loaded with luxury fabrics during the emirate of ʿAbd al-Raḥmān II. Wathīma b. Mūsā lived in Fasa, Persia, which was an important textile centre of *washy*, prime silk (*khazz*) and goat wool (*shaʿr*).[71] He was a *washy* salesman (*washshāʾ*), activity that took him to Basra, Egypt, and al-Andalus, and then back to Egypt, where he met his death in 237 h./851.[72] *Washy* textiles, which originated in the Mashriq, were still rare in al- Andalus in the first half of the third h./ninth century, making it worthwhile for a Persian trader to bring it such a long way. In the following decades, however, al-Andalus began producing its own, as seen in the previous section: by 303 h./915–916 the Umayyad *ṭirāz* workshop was already making it. This clearly indicates that the Umayyad sovereign and his circle began demanding oriental cloths, the production of which soon began in the Andalusi *ṭirāz*.

The material evidence also reflects an oriental influence in the configuration of Andalusi textile workshops. Concerning possible imports, the Museo de la Colegiata de Covarrubias preserves an early tapestry – from the monastery of San Pedro de Arlanza (Burgos) – that may have been made in Egypt. While Carmen Bernis argues that it is an Andalusi production inspired by Coptic techniques and decoration,[73] María Judith Feliciano goes a step further and suggests an Egyptian provenance.[74] The influence of the Egyptian textile sector is also

apparent in the tapestry bands of the two *ṭirāz* pieces from the caliphate period cited earlier, namely the Veil of Hishām II, and the Pyrenees Tapestry Band. Carmen Bernis concludes that the technique was linked to Egyptian Coptic traditions, but had by that time introduced features that she regarded as typically Andalusi.[75] Laura Rodríguez also finds decorative parallels with Coptic fabrics in the anthropomorphic and zoomorphic motifs depicted in the veil (Figure 3), whereas the animal and plant motifs on the Pyrenees Tapestry Band seem to emulate Persian traditions.[76]

Therefore, both the written and material evidence suggest that Egyptian and Iraqi- Persian textiles and techniques had a significant influence upon the configuration of the Umayyad *ṭirāz* workshop, contributing to setting up the basis of the Andalusi textile sector which, by the caliphate period, had already developed its own personality traits. Taking into account the key role played by Umayyad rulers in the adoption of Abbasid clothing customs and their demand for fine fabrics from the Mashriq, my interpretation is that, for the most part, oriental techniques arrived to al-Andalus from the reforms undertaken by ʿAbd al-Raḥmān II onwards. Based on this interpretation, the policy pursued by the emir and his successors effectively improved the Umayyad textile institution by, among other things, incorporating a number of skilled workers from the Abbasid territory into the payroll of the *ṭirāz*. The newcomers brought with them new techniques and fabrics – such as the *washy* – which became increasingly popular among the Andalusi elite, a group whose preferences merged gradually with Abbasid tastes, as the Umayyads had intended.[77]

Focusing on the period of the caliphate, there are two important aspects to consider in the relationship between the Umayyad *ṭirāz* workshop and the Middle East. First, as the Andalusi *ṭirāz* grew, its productions became so refined that they were openly compared with the most important textile centres of the Mashriq. As previously noted, in the mid- fourth h./tenth century, Ibn Ḥawqal claimed that the prime silk and linen textiles from the Umayyad *ṭirāz* workshop were of greater quality than those from Iraq and Egypt, respectively. And he went even further, reporting that fabrics from the Andalusi *ṭirāz* found their way to Egypt and sometimes the Persian region of Khorasan.[78] These destinations are telling. Whereas during the third h./ninth century Egypt and Iraq- Persia had contributed technical and typological innovations to Andalusi textiles, by the next century the latter were considered good enough to be imported by the former.

Second, the increasing capacity of the *ṭirāz* to produce high-quality fabrics did not discourage the Umayyads from acquiring exclusive Middle Eastern garments, which were distributed only within the top tier of the Andalusi hierarchy, emphasizing their role as social markers. In an earlier example, we found chamberlain al-Manṣūr presenting a gift of 2285 prime silk fabrics from the *ṭirāz* in 387 h./997. The gift, however, also included exclusive textiles from beyond al-Andalus – two fabrics of Byzantine *dībāj*, and two Blanford's fox-fur coats – which were undoubtedly reserved for the military leaders. As a way to draw a neat line between higher and lower echelons of power, the caliphate managed to secure a regular supply of eastern fabrics, such as the ʿubaydid textiles from Iraq. In Ibn Ḥayyān's chronicle, the Umayyad caliphs are reported to have used these vestments as gifts for their closest representatives on 16 occasions.[79]

One of the ways the Umayyad court had to access eastern Mediterranean fabrics was diplomacy. In 360 h./971, for instance, caliph al-Ḥakam II granted audience to an emissary

from the Count of Barcelona, Borrell II, at Madīnat al-Zahrāʾ. The ambassador brought with him a number of bundles of *dībāj*, which were very likely of Byzantine origin.[80] However, it seems that, as during the emirate period, the most reliable way to access overseas commodities was trade, especially through merchants from Amalfi (*tujjār am-malfiyyūn*), who are singled out in the record. Ibn Ḥayyān points out that the Amalfitans first reached al-Andalus in 330 h./942, after they had been granted safe passage by the state (*amān al-sulṭān*). They brought their wares of *dībāj* and *murex* purple (*birfīr*) to the caliph ʿAbd al-Raḥmān III, who purchased most of it, the rest of their wares being sold in the market in Cordoba. The deal was profitable for everyone and encouraged further transactions; indeed, barely a few months later the Amalfitan merchants were back with more *dībāj*.[81]

Amalfitan goods, such as *dībāj* and *murex* purple, came from the Byzantine Empire. Purple dye was extracted from the *murex* seashell, and the production process was anything but straightforward; one gram of dry dye required as many as 10,000 shells; the exorbitant value of this commodity explains the symbolic association between the emperor and the colour purple, and the empire's attempts to impose a monopoly over production and distribution.[82] The merchants from Amalfi were able to bypass these restrictions and sell the dye across the Mediterranean, including the Umayyad caliphate, which was eager to access a commodity with such symbolic power. The Andalusi *ṭirāz* produced fabrics in this colour, such as the 10 purple felts (*lubūd ṭirāziyya urjuwāniyya*) and purple prime silk (*khazz ṭirāzī rujuwānī*) which ʿAbd al-Raḥmān III distributed as gifts in 319 h./931 and 324 h./936.[83] These productions, however, predate the arrival of the Amalfitan merchants, so alternative ways to achieve this colour were sought. The analysis of the Veil of Hishām II indicates that the purple colour in this piece was the result of combining madder and woad, both of which were produced in al-Andalus and collected by the Umayyad tributary system.[84] It seems clear that the scarcity and high value of *murex* led to alternative – and more or less efficient – ways to reproduce the highly coveted purple colour by means of a mixture of available dyes, both before and after the arrival of Amalfitan merchants.

Jewish merchants also contributed to the supply of luxury fabrics to the Umayyads. Ibn Daud mentions Yaʿqūb b. Jau and his brother Yūsuf, who specialized in silk vestments and banners, which were often sold to high-ranking Umayyad officials. On one occasion, they gifted several fine banners to caliph Hishām II and his chamberlain al- Manṣūr (366 h./976–392 h./1002); in appreciation, al-Manṣūr appointed Yaʿqūb as head representative of the Jewish community in Umayyad territory.[85]

Veering away from state hegemony: the commercial ṭirāz *of Pechina and Almeria*

The *ṭirāz* institution made the Umayyads the leading producers and distributors of luxury fabrics in al-Andalus, at the expense of keeping a large and costly administrative system to run the operation. The expense was justified by the crucial role played by the fabrics in the hierarchical organization of civil and military government and as a diplomatic tool to expand Umayyad influence in areas of the western Maghreb and northern Iberia. The political practice associated with the fabrics was of prime importance in reinforcing the Umayyad dominions' dependency on the ruler, which in turn attracted more economic and human resources towards the latter. As such, *ṭirāz* fabrics were not only as valuable as their raw

materials and production costs; when used as gifts, they acquired an added (political) value for both giver and taker.

This political value, common to Umayyad, Abbasid, and Fatimid *ṭirāz* textiles, was a key factor in the increasing value of fabrics in Dār al-Islām. Beyond the mere sale of *ṭirāz* textiles – it was not rare for them to be eventually sold – clothing in general grew to be a highly prized possession. In a way that echoes the acquisition of land, slaves or animals, the procurement of highly valued garments became a form of family investment; valuable textiles could become treasured heirlooms passed on from generation to generation and the most important element in dowries, and they could always be sold if necessary.[86] This makes sense of the fact that, by the mid-fourth h./tenth century, prime silk fabrics – highly valued pieces, which were at least initially closely linked with the Umayyad dynasty – were privately sold and bought in Cordoba's Main Souk.

The growing textile market throughout Dār al-Islām encouraged the increasing involvement of private traders. Merchants – whose role in setting up the Umayyad *ṭirāz* institution by bringing the necessary expertise and fabrics from the Middle East, has already been examined – began now to dispute the state hegemony in the production and distribution of luxury textiles. The first signs of competition coincide with the consolidation of the *ṭirāz* workshop under ʿAbd al-Raḥmān II (206 h./822–238 h./852). Chronicler Ibn al-Qūṭiyya reports that a poet in the emir's inner circle once turned up attired in fine Egyptian and Iraqi clothes (*bizza miṣriyya ʿalā ʿirāqiyya*), which he had bought himself – no doubt, through his commercial contacts, and not as a gift from the ruler – and the emir complained that the poet had bypassed his role as the unique donor of such vestments.[87]

The greatest challenge to this hegemony was that posed by the textile workshops of Pechina and Almeria, in south-eastern al-Andalus. I have studied the trajectory of the Andalusi sailors (*baḥriyyūn*) who, beginning in the mid-third h./ninth century, established a trans-Mediterranean trade route that facilitated a fast, safe and constant exchange of people and goods between al-Andalus and the Mashriq. In the last third of the third h./ ninth century, these sailors settled in Pechina, eight kilometres north of the port of Almeria, in which their ships moored. Pechina quickly evolved into a dynamic industrial and commercial hub, with a significant textile activity, as attested by both the written and the material record.[88] The biographies of two ulama from Pechina reported that their fathers were, respectively, a textile vendor (*shaqqāq*) in 268 h./881–882 and a darner (*raffā'*) in 310 h./922–923.[89] In addition, the excavation of the artisanal suburb of Llano de Benítez in Pechina yielded evidence for textile activity, namely spindle whorls and loom weights, dated to the first half of the fourth h./tenth century.[90]

Among the various types of fibres used at Pechina, silk and linen stand out. The geographer al-Ḥimyarī points out that, during its period of urban expansion – in the first half of the fourth h./tenth century – Pechina hosted silk workshops (*ṭurūz ḥarīr*),[91] and Aḥmad al-Rāzī's geographical description suggests that, in the mid-fourth h./tenth century Pechina was making silk fabrics with gold threads,[92] revealing that they were producing the types of textiles that used both materials: embroidery, *washy* and *dībāj*. Regarding linen (*kattān*), in the same period Ibn Ḥawqal indicates that linen mantles (*ardiya*) were among Pechina's most prestigious productions, and were even exported to Egypt, Mecca, and Yemen,[93] that is, territories that Andalusi merchants reached by sailing across the Mediterranean and the Red Sea.

It would be surprising for the Umayyad *ṭirāz* institution to install mills in the south-eastern corner of al-Andalus, far from Cordoba and close to active maritime trade networks. At the end of the third h./ninth century, when the textile sector in Pechina was taking shape, the Umayyad state underwent a serious political crisis, and effectively lost control over large swathes of the territory of al-Andalus. As a result, the sailors in Pechina were virtually autonomous, and this, in my view, led them to redirect part of the silk and linen being harvested in nearby Sierra Nevada to the new *ṭuruz* in their city. These, at any rate, were private workshops producing for the market, as the demand for silk and linen, both raw and woven, was soaring across the Mediterranean, which was easily accessible from the port of Almeria. As an indication that the commercial networks created by these sailors soon began to deal their goods in the Middle East, the geographer al-Iṣṭakhrī reports that, during the emirate years of ʿAbd al-Raḥmān III (300 h./912–316 h./929), the high-quality silk (*ḥarīr*) from the province of Ilbīra was being shipped to Baghdad.[94]

By the early fifth h./eleventh century, the transformation of the Andalusi textile sector was complete. The textual sources describe this period as a time of *fitna*, the caliphate breaking up into a number of regional powers and finally disappearing in 422 h./1031, thereby also putting an end to the Umayyad *ṭirāz* institution. Pechina did not fare better. Geographer al-Rushāṭī indicates that the city was destroyed in 402 h./1011–1012, following the initial tensions of the *fitna*. The city's refugees settled in Almeria,[95] which had initially been just a port, but which was established as a city in its own right in 344 h./955–956, although at first playing only second fiddle to the much more dynamic hub of Pechina. Finally, with the destruction of Pechina, the textile activity also moved to Almeria, and the geographer Yāqūt points out that Almeria produced the best *washy* and *dībāj* in the whole of al-Andalus, even surpassing those made in Cordoba.[96] In all probability, this refers to the period after the disappearance of the Umayyad *ṭirāz* workshop in the early fifth h./eleventh century. Geniza documents showed that, by that time, Almeria had become the main supplier of silk – both fibre and fabric – in the Mediterranean.[97] According to al-Idrīsī, at the end of the fifth h./eleventh century, the city hosted no less than 800 silk (*ḥarīr*) *ṭuruz*,[98] all thanks to the trading vessels that kept the exports flowing.

Conclusions

The development of the Andalusi *ṭirāz* institution rested on three main pillars: the existence of a centralized fiscal circuit; the configuration of an increasingly complex production and distribution textile circuit; and an agile flow of exchange with the textile circuits in other Mediterranean polities. Concerning the first, the Umayyad administration centralized a regular system for the supply of raw materials, which converged on Cordoba from different regions of al-Andalus. This was the result of a deliberate fiscal policy to incentivize production of the agricultural commodities that the *ṭirāz* workshop demanded, making each region specialize in those raw materials that were the most suitable for its environmental conditions, for example silk and flax, which found optimal conditions in the periphery of Sierra Nevada.

Concerning the second pillar, the *ṭirāz* institution allowed the Umayyads to hold a hegemonic position in the production and distribution of fine fabrics in al-Andalus, which were used by the ruler as political markers. This was made possible by the creation of a

network of workshops that was as complex and diversified as the recipients of the textiles: the ruler's personal workshop, other state-owned mills and private workshops formed a ranked structure which, in turn, produced fabrics that reinforced the hierarchy of Umayyad power. This growing complexity and diversification was a great boost for the Andalusi textile sector, which, although at first consisting of close-knit operations around the Umayyad circle of power, soon began to fan out to other locations far from the capital such as Zaragoza, and to private markets open to an ever-wider social demographic, including Cordoba's Main Souk.

The successful organization of the Andalusi *ṭirāz* workshop was possible because of the adoption of crops, techniques, and cloths originally developed in the textile circuits of other Mediterranean polities. Certainly, there were many raw materials and fabrics which, after being fetched by the Umayyad court from abroad for a long while, were eventually incorporated into the productions of the Andalusi *ṭirāz*. This is the case of silk, the cultivation of which was so jealously guarded in the East, and was eventually to become the most representative fibre of the Andalusi textile institution, but also of *washy*, which, from being brought from such distant regions as Persia, over time became a common Andalusi product. The few instances in which the process of transference is well understood – for example Byzantine purple and the productions of the Abbasid *ṭirāz* – indicate that the formerly closed eastern textile circuits were opened up by merchants, who brought these commodities to al-Andalus. Conversely, these same merchants showed a growing interest in the Umayyad developing circuit: the sailors from Pechina and Almeria started to acquire silk and linen from the periphery of Sierra Nevada – materials that had normally gone to the *ṭirāz* workshop as taxes – to supply their private workshops. This finally resulted in Almeria becoming the main supplier of silk – both raw and woven – all across the Mediterranean, as a private enterprise producing for the market. Gone was the fiscal and state-building motivation that had first brought the *ṭirāz* institution into being and kick-started sericulture and the silk textile sector in al-Andalus.

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Notes

1. Mesa, *Lenguaje indumentaria*, 134–5.
2. Stillman and Sanders, "Ṭirāz," 534–8.
3. Kerner, "Embroidering History," 17–20.
4. Goitein, *Economic Foundations*, 102.
5. Manzano Moreno, *Conquistadores, emires*, 444–6.
6. This information can be found in the geographical section of his work. It was translated into Castilian and reproduced in the two following chronicles: *Crónica Rasis*, 11–118; *Crónica 1344*, 47–84.
7. Antonio Malpica was the first to point out that the list of goods provided by al-Rāzī suggests that these products were recorded in the Umayyad tax ledgers: Malpica, "Arqueología paisajes," 55.
8. The calendar has an Arabic and a Latin version; the former was written by the court secretary ʿArīb b. Saʿd and the latter by bishop Rabīʿ b. Zayd: Ibn Saʿd and Ibn Zayd, *Calendrier Cordoue*.
9. Al-ʿUdhrī, *Tarṣīʿ al-akhbār*, 93.
10. Al-Bakrī, *al-Masālik wa-l-mamālik*, 84–85.
11. Al-Idrīsī, *Nuẓhat al-mushtāq*, 174.
12. Ibn Saʿd and Ibn Zayd, *Calendrier Cordoue*, 49, 63, 91, 133.
13. Ibn Ḥayyān, *al-Sifr al-thānī*, 395. Although Ernst Kühnel suggests that *khaẓẓ* was a fabric with a silk warp and a wool weft, Shelomo Goitein and Moshe Gil argue that in the Geniza records the word is used to refer to prime silk: Kühnel, "Abbasid Silks," 370; Goitein, *Economic Foundations*, 454; Gil, "References Silk," 36–38.
14. *Akhbār majmūʿa*, 156–7.
15. Lombard, *Les textiles*, 95; Lagardère, "Mûrier et culture," 97.
16. Manzano Moreno, "Asentamiento ŷund-s," 330–58.
17. López, *Mercaderes, artesanos*, 40–43.
18. García, "Plantas textiles," 427–9.
19. *Crónica Rasis*, 30; *Crónica 1344*, 53.
20. Al-Bakrī, *al-Masālik wa-l-mamālik*, 84–85.

21. Serjeant, *Islamic Textiles*, 152–5.
22. The earliest mention of the use of safflower as a textile dye in al-Andalus alludes to the Cordoban judge Muḥammad b. Bashīr (d. 198h./813–814), who usually wore a safflower- dyed mantle (*ridāʾ muʿaṣfar*): Ibn Ḥayyān, *al-Muqtabas anbāʾ*, 203–4, 209, 219.
23. It was also grown in Niebla, because Aḥmad al-Rāzī mentions it in the mid-fourth h./tenth century; as well as Seville, cited by al-ʿUdhrī a century later: *Crónica 1344*, 73; al-ʿUdhrī, *Tarṣīʿ al-akhbār*, 96, 111.
24. Al-ʿUdhrī, *Tarṣīʿ al-akhbār*, 93.
25. García, "Plantas textiles," 437.
26. Serjeant, *Islamic Textiles*, 196.
27. Al-Iṣṭakhrī, *Masālik al-mamālik*, 42–45.
28. Ibn Saʿd and Ibn Zayd, *Calendrier Cordoue*, 91, 133, 145; Manzano Moreno, *Corte califa*, 52, 74.
29. Al-Bakrī, *al-Masālik wa-l-mamālik*, 88, 127.
30. Gayo and Arteaga, "Análisis de colorantes," 127–30, 134, 140–4.
31. Martínez, *Epigrafía árabe*, 211–2 (no. 81).
32. Partearroyo, "Franja Pirineo," 224–5 (no. 20). Future chemical analyses will allow us to establish more firmly the chronological and geographical framework of the Pyrenees Tapestry Band. More doubts exist concerning the provenance of the so-called ʿAbd al-Raḥmān III's *ṭirāz* (The Cleveland Museum of Art, no. 1977.188), the inscription on which has been argued to refer to this caliph and to mention the date 330h./941–942: Mackie, *Symbols of Power*, 172–9. First, the inscription is very hard to read, as only the stitches on the fabric are preserved. In addition, the epigraphist María Antonia Martínez rules out the inscription bearing a date and, based on the epigraphic features, suggests that it could be a Fatimid production: Martínez, *Recientes hallazgos*, 49–50., Second, Asunción Lavesa also argues that the piece is typologically and technically akin to Fatimid productions, and suggests an Egyptian origin: Lavesa, "Aproximación arqueológica," 4–7.
33. Ibn Saʿd and Ibn Zayd, *Calendrier Cordoue*, 133.
34. Ibn Ḥayyān, *al-Sifr al-thānī*, 395.
35. The event is described in the fourth h./tenth century by Ibn al-Faraḍī and in the eighth h./ fourteenth century by Ibn Khaldūn, *Kitāb al-ʿibar*, 138. Both passages were in turn reproduced by al-Maqqarī: al-Maqqarī, *Nafḥ al-ṭīb*, 356–60; Vallvé, "Industria al-Andalus," 227.
36. Ibn Ḥayyān, *al-Sifr al-thānī*, 290.
37. Hambly, "From Baghdad," 215.
38. Stillman, "Khilʿa," 6.
39. Ibn Ḥayyān, *al-Sifr al-thānī*, 281, 290–1.
40. Ibid., 290; Ibn Ḥayyān, *al-Muqtabas anbāʾ*, 184–6.
41. Ibn ʿIdhārī, *al-Bayān al-mughrib*, 148, 191; Ocaña, "Ŷaʿfar," 218–23; Ibn Ḥayyān, *al-Muqtabis*, 173.
42. Ibid., 91–92.
43. Ibn Saʿd and Ibn Zayd, *Calendrier Cordoue*, 73, 83, 103, 163.
44. Borrego, "Análisis técnico," 81–83. The metal threads in the Pyrenees Tapestry Band contain 96.5% gold and 3.5% silver: Gayo and Arteaga, "Análisis de colorantes," 130.
45. Yāqūt, *Muʿjam al-buldān*, 119.

46. García Gómez, "Tejidos, ropas," 44; Mesa, *Lenguaje indumentaria*, 121–32. For a lengthy discussion about textiles and their role in the organization of the Umayyad caliphate, see: Manzano Moreno, *Corte califa*, 70–86.
47. Ibn Ḥayyān, *al-Juzʾ al-khāmis*, 115–6.
48. Ibn Ḥayyān, *al-Muqtabis*, 108, 118, 126.
49. Ibn Ḥawqal, *Ṣūrat al-arḍ*, 114.
50. Serjeant, *Islamic Textiles*, 136–47.
51. Ibn ʿIdhārī, *al-Bayān al-mughrib*, 295–7.
52. Ballestín, "Jilʿa monedas," 398.
53. Jacoby, "Silk Economics," 215; Sokoly, "Textile Institutions," 115–21.
54. Manzano Moreno, *Corte califa*, 307–10.
55. The word *mulḥam* alludes to a fabric that combines a silk warp and a weft woven in another material: Stillman and Sanders, "Ṭirāz," 536.
56. Ibn ʿAbd al-Raʾūf, *Risāla ādāb*, 86–87, 102–4, 114.
57. Canto and Ibrāhīm, *Moneda andalusí*, 44–50.
58. Ibn Ḥawqal, *Ṣūrat al-arḍ*, 113.
59. Ibn Ḥayyān, *al-Muqtabis*, 197.
60. While Emilio García Gómez puts the origin of ʿubaydid textiles in the Mashriq, Xavier Ballestín suggests that they originated in al-Andalus: García Gómez, "Tejidos, ropas," 45; Ballestín, "Jilʿa monedas," 399–400. I agree with Eduardo Manzano Moreno that the reference at hand for an Iraqi ʿubaydid textile is sufficiently explicit to locate the production of these fabrics in Iraq: Manzano Moreno, *Corte califa*, 360.
61. Ibn Ḥayyān, *al-Juzʾ al-khāmis*, 351–2.
62. Ibid., 268.
63. Ibn Ḥayyān, *al-Muqtabis*, 25.
64. Ibid., 389.
65. Jacoby, "Silk Economics," 215; Sokoly, "Textile Institutions," 120.
66. Ibn Ḥayyān, *al-Sifr al-thānī*, 290.
67. Al-ʿUdhrī, *Tarṣīʿ al-akhbār*, 22.
68. Al-Iṣṭakhrī, *Masālik al-mamālik*, 44.
69. Ibn Ḥayyān, *al-Sifr al-thānī*, 323–4.
70. Ibid., 291–2; Ibn Ḥayyān, *al-Muqtabas anbāʾ*, 163–4.
71. Serjeant, *Islamic Textiles*, 49–51, 54–55.
72. Ibn Yūnus, *Tārīkh al-ghurabāʾ*, 249 (no. 662).
73. Bernis, "Tapicería hispano-musulmana," 202.
74. This fabric has not been subject to detailed analysis: Feliciano, "Sovereign, Saint," 125–6 and "Corpus epigráfico," 289–318. It would be interesting to undertake this task in the future.
75. Bernis, "Tapicería hispano-musulmana," 190–4, 198–9, 204–5.
76. Rodríguez, "Producción textil," 277–8.
77. The oriental influence in the landscape of Iberian textile consumption must have been enormously complex. One of the most promising avenues to unravel this complexity are chemical and technical studies of surviving fabrics, as illustrated by Ana Cabrera's recent work with pieces in the Museo de San Isidoro (León). According to this work, the textiles lining the San Isidoro casket are the earliest: the radiocarbon analysis has dated a Central Asian or Near Eastern silk piece to CE 773–960 cal.; and a linen and silk

piece, probably Near Eastern in origin, to CE 878– 1013 cal. Taking these dates into account, Ana Cabrera has put forward the thought-provoking proposal that these eastern fabrics arrived to Oviedo or León in the third h./ninth or fourth h./tenth centuries, and that they might have been included in the royal treasures at that time: Cabrera, "Textiles Isidoro," 96–98, 104–11. Similarly, María Judith Feliciano has presented textual evidence that could help to contextualize the arrival of these fabrics to northern Iberia during the Umayyad period: Feliciano, "Sovereign, Saint," 127–31. However, we must not rule out the possibility that these fabrics came to León in 455h./1063, when Saint Isidore's body was brought from al-Andalus. The *Historia Silense* claimed that Seville's ruler al-Muʿtaḍid, before handing it to the Leonese, covered the sarcophagus with a fine curtain (*cortina): Historia Silense*, 202. This could well be the two fabrics under analysis here. Concerning their arrival in Seville, in the fifth h./seventeenth century the city was the capital of one of the largest and most powerful *taifa* kingdoms in al-Andalus, and posed a substantial demand for luxury articles. In this post- Umayyad context, it is plausible for these third h./ninth- or fourth h./tenth-century fabrics to have arrived in Seville from overseas, as it was not uncommon for valuable textiles to be preserved as heirlooms for generations, or to be traded. Future analyses will help to better contextualize the circulation of these and other oriental fabrics in Iberia.

78. Ibn Ḥawqal, *Ṣūrat al-arḍ*, 110.
79. Ibn Ḥayyān, *al-Muqtabis*, 80, 108, 118, 132–3; *al-Juzʾ al-khāmis*, 268, 351, 426–8.
80. Ibn Ḥayyān, *al-Muqtabis*, 22.
81. Ibn Ḥayyān, *al-Juzʾ al-khāmis*, 478, 485. The role played by Amalfitan merchants in the Mediterranean and Cordoba is analysed in: Manzano Moreno, "Circulation de biens," 175–9; *Corte califa*, 70–71, 74.
82. Rodríguez, "Púrpura," 471–6.
83. Ibn Ḥayyān, *al-Juzʾ al-khāmis*, 308, 389–90.
84. Gayo and Arteaga, "Análisis de colorantes," 130.
85. Ibn Daud, *Sefer ha-qabbalah*, 87–89.
86. Mesa, *Lenguaje indumentaria*, 222–32; De la Puente, "Documentos jurídicos," 76–92.
87. Ibn Ḥayyān, *al-Sifr al-thānī*, 341–4.
88. López, *Mercaderes, artesanos*, 129–46.
89. Ibn al-Faraḍī, *Tārikh ʿulamāʾ*, 302 (no. 498); ʿIyāḍ, *Tartib al-madārik*, 6 vol., 155; 7 vol., 22; Ibn Bashkuwāl, *al-Ṣila*, 574–5 (no. 851).
90. Acién, Castillo, and Martínez, "Barrio artesanal," 147–66. José María Moreno Narganes (personal communication) has suggested that the cited loom weights would likely be spindle whorls, based on wide dispersion of the former throughout the houses and their small weight (20 g); medieval European loom-weights generally weigh between 150 g and 250 g. Future archaeological work will doubtless help clarify these points.
91. Al-Ḥimyarī, *al-Rawḍ al-miʿṭār*, 79.
92. *Crónica Rasis*, 28. This Castilian version of al-Rāzī's work cites Almeria and not Pechina as the textile production centre of silk and gold. It is highly likely, however, that it was in truth the latter because, at the time of writing al-Rāzī, Almeria was not yet a city; it was founded the same year the author died, in 344 h./955–956. The most probable explanation is that the workshops were at Pechina, and that al-Rāzī mentioned Almeria because of the close links between both places, given that at the time Almeria was basically the port of Pechina.
93. Ibn Ḥawqal, *Ṣūrat al-arḍ*, 114.

94. Al-Iṣṭakhrī, *Masālik al-mamālik*, 44–45.
95. Al-Rushāṭī, *Iqtibās al-Anwār*, 29, 59.
96. Yāqūt, *Muʿjam al-buldān*, 119.
97. Goitein, *Jewish Traders*, 50–51, 259–66.
98. Al-Idrīsī, *Nuẓhat al-mushtāq*, 197.

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