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How (not) to organise Roman textile production. Some considerations on merchant-entrepreneurs in Roman Egypt and the ἱστωνάρχης

Kerstin Droß-Krüpe

Preliminary remarks¹

For almost the last 100 years, various ancient historians have suggested that organisations comparable to the “putting-out” system existed in the Roman Imperial period. They are most commonly believed to have occurred in textile production. As early as 1913, Theodor Reil assumed that the production of textiles in Roman Egypt was organised through the putting-out system.² This idea can subsequently be traced through more than a century to recent publications.³ However, as this assumption is rarely based on genuine source material, it seems appropriate to get to the bottom of this hypothesis. In this context, special attention will also have to be paid to the question of large textile companies and the professional title of ἱστωνάρχης, which has been associated with the putting-out system in the past.

Putting-out system and merchant-entrepreneurs

In order to avoid terminological blurring, let us briefly outline what is understood in economic history and modern economics by the term “putting-out system”. This term is used to describe a form of economic organisation that

is mainly typical of modern textile production, in which craftsmen who are not independent produce goods at home. A merchant-entrepreneur provides the resources and/or raw materials. He is also the one who collects the goods after completion and markets them centrally.⁴ This production system was particularly frequent in the production of bulk goods, which were in high demand and could be produced in a decentralised manner without either complex technical equipment or costly investments in the necessary production material. The skills required in the putting-out system were usually low. Work in the putting-out system was especially common in rural areas, where only narrow agricultural yields could be achieved and where it was an important additional income for poorer farming families. While wages were often very small, they were available in those phases of the year when there was no work on the fields.

The depressed living conditions endured by most of those employed in the system are illustrated by Thomas Hood’s poem *The Song of the Shirt* from 1843. Another condition for the putting-out system to exist was for labour to be paid as piecework, since working at home made the monitoring of time impossible. From the point of view of economic rationality, the advantages of this kind of

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1. My thanks go to Stefanie Hoss for helping with the English version of this paper.

2. Reil 1913, p. 108; followed by Wipszycka 1966, p. 2.

3. Wierschowski 1993, p. 127; Vicari 2001, p. 88 and note 14; Drexhage *et al.* 2002, p. 111 and 132; Kehoe 2007, p. 566; Gibbs 2012, p. 42–43.

4. The putting-out-system is not, however, a modern development, but already appears occasionally in the medieval period, see Bettger 1985, p. 1675. For the basics on the putting-out system, see Holbach 1994, esp. p. 26–38.

production are obvious: a large number of products could be produced according to season or demand without the necessity of having central workshops, and especially without the investments connected with their construction. Central to this is the separation of capital and labour characteristic of a capitalist system: the merchant-entrepreneur bears the entire financial risk, since he has to lay out his capital in order to procure the materials and work equipment and pay the workers, before trying to sell the products they have produced on the market. However, he also has the exclusive and unrestricted right to dispose of the work products. Resulting from this, he also has a decisive influence on the production process and he determines production output and workforce wages. Another premise for this decentralised way of manufacturing goods is that the putting-out system is advantageous only as long as the production processes were short and did not require a division of labour.⁵

In this paper, we will begin by exploring the genesis of the idea of a Roman putting-out system in Classical scholarship, before the individual characteristics of publications about textile industry (briefly outlined above) are compared with the available ancient sources on the Roman textile economy of the Imperial period. For this, the papyri from Egypt are of central importance. They provide a particularly good impression of the complex conditions of the Roman textile industry, since many thousands of documents have been preserved from the province of Egypt, which offer more insights into the ancient realities of normal everyday life than any other source. From contracts, letters, receipts, petitions and the like we get an almost voyeuristic view into the economic, social and legal realities in this province, and thanks to these texts we are informed much better about Egypt than all other regions of the Imperium Romanum or the rest of the ancient Mediterranean world.⁶

On the genesis of an idea

When Reil first advanced the thesis of a putting-out system in the textile production of Roman Egypt, he relied mainly on the papyrus *P. Haw. 208*.⁷ He interpreted this document, found in a necropolis of the Fayum and dated to the year AD 24/25, as the inventory of a merchant-entrepreneur.⁸ In his opinion – and here he follows the *editio princeps* – the papyrus lists the products delivered to the merchant-entrepreneur, the amounts and the name of the supplying weaver. He returned to his idea of the putting-out system in his interpretation of the professional title ἱστωνάρχης.⁹ Mikhail M. Khvostov also relied on *P. Haw. 208* and Reil's interpretation of it to support the idea of the putting-out system for the Roman textile industry, and more than 50 years later, Ewa Wipszycka followed him in this.¹⁰ Although Khvostov acknowledges that there is no unequivocal evidence of the existence of intermediaries for the Roman period, he believes that the transfer of these economic processes – established with certainty for other periods – into the Roman period is legitimate.¹¹ Wipszycka cannot avoid referring to the lack of evidence from the Roman period on the question of the economic (in)dependence of weavers. In her view the idea of merchant-entrepreneurs is also supported by *P. Oxy. XIV 1737*. This document is a list of goods and prices, and lists the lease of a loom in addition to garments. For Wipszycka, this document is the ledger of a merchant-entrepreneur, who “a noté les pièces de vêtement au fur et à mesure qu'il les recevait, marquant la date de chaque livraison”.¹² Scholars in both papyrological research as well as ancient history have followed this interpretation almost without exception.¹³

However, Peter van Minnen was able to demonstrate convincingly that *P. Haw. 208* is a register of customs duties, which excludes this document as proof of the existence

5. Hansmann 2006, p. 18.

6. The opinion that the circumstances reconstructed from Egypt cannot be transferred to other provinces because Egypt is a 'special case' has been frequently expressed in the past, stubbornly ignoring the finds and the information from documentary papyri (e.g. Sommer 2013). However, Rostovtzeff (1955/1998, Vol. 1, p. 200–201) has stated that the information from Egypt is not only extremely reliable, but also perfectly agrees with the, albeit sparser, finds from other parts of the Empire, which has been confirmed by later research (e.g. Braunert 2000, Dross-Krüpe 2011, Reinard 2016, esp. p. 947–1002).

7. With BL IX, p. 8 and BL X, p. 234. After P. van Minnen re-examined the document, the text is now known as SB XX 15189 (van Minnen 1992, p. 205–208).

8. Reil 1913, p. 108 note 6.

9. *Ibid.*, p. 108, for more details see below.

10. Khvostov 1914, p. 176; Wipszycka 1965, p. 99.

11. Khvostov 1914, p. 176.

12. Wipszycka 1965, p. 99. She further elaborates, “Tout cela peut nous donner une idée des opérations qu'exécutait un intermédiaire (celui qui a dressé le compte ou celui à qui ce compte était destiné). C'était un homme d'affaires ayant des relations avec de nombreux artisans qui lui fournissaient des vêtements faits contre rémunération en espèces.”

13. See the literature listed in note 2.

of a putting-out system in weaving.¹⁴ The interpretation of *P. Oxy.* XIV 1737 is also subject to uncertainties. Many of the abbreviations used in this papyrus are difficult to resolve, with several readings possible for each of them, making the correct interpretation of the text very difficult. The structure of *P. Haw.* 208 corresponds to *P. Oxy.* XIV 1737 and in my opinion points to it being a private settlement, as is known from countless other examples.¹⁵ It is therefore conceivable that the author of this document lists his private expenses here and did not, as Wipszycka supposes, receive the listed items for the price named from third parties. The details of the lease for the loom are also not clear; it must remain open, whether this is expenditure or revenue to be registered.

Since both *P. Haw.* 208 and *P. Oxy.* XIV 1737 cannot be used as evidence, or are at least very doubtful proof of the existence of an ancient putting-out system in the Roman textile industry of the province of Egypt, the characteristics of this production method (as outlined above) will now be compared to the available source material. These characteristics include: low specialisation and qualification; external acquisition of the necessary raw materials; external marketing / distribution of the manufactured products; a high degree of standardisation; economic dependence of the craftsman on a merchant-entrepreneur; and payment on the basis of finished pieces instead of working hours.

Specialisation and qualification

Looking first at the premise of a relatively small degree of specialisation, it soon becomes clear that this is not true for the textile economy of the Roman Empire, which was characterised by a strong professional specialisation and a high degree of division of labour.¹⁶

The papyri of the province of Egypt alone document 27 different professions and job descriptions for the production of textiles and garments from the 1st to 3rd centuries

AD. If we add the epigraphic record, then 113 groups of textile craftsmen can be found in Greek-language records alone.¹⁷ The spectrum of documented fields of employment in this economic sector ranges from the basic and unspecified work steps of dyeing, weaving and fulling textiles to the highly specific purple dyers (πορφυροβάφος), linen weavers (λινόϋφος / λίνυφος) and wool washers (ἐριοπλύτης). The specialisations relate to specific raw materials on the one hand and to specific textiles (e.g. carpet weavers, ταπιδυφάντης, or weavers of Tarsian garments, ταρσικάριος) on the other. So, Roman textile production can by no means be described as an economic sector with a low degree of specialisation; on the contrary, professional specialisations are very pronounced. These are no good prerequisites for the establishment of a putting-out system. Moreover, the skills and abilities required of the craftsmen involved in textile manufacture cannot be considered as negligible. On the contrary, the archaeological finds demonstrate that many of the textiles produced in this region were manufactured with great skill.¹⁸

External acquisition of the necessary raw materials and external marketing/distribution of the manufactured products

Some indications of how the acquisition of raw materials in the Roman textile economy was managed can be gained from the papyri. Interestingly, different mechanisms can be identified: *P. Berl.Zill.* 9, a private letter from the year AD 68, indicates that the weaver Satabous has failed to pick up the threads for the textile to be produced. So, here it is the textile craftsman who is responsible for obtaining the necessary materials. However, it has been documented more frequently that it is the customer, i.e. the person commissioning the production of a fabric, who furnishes the textile craftsmen with their raw materials. Both the yarns and the dyes are procured by the clients themselves.¹⁹

14. van Minnen 1992.

15. For this type of text, see Bandi 1937, p. 348–451.

16. See Droß-Krüpe 2011, p. 47–102.

17. Ruffing 2008, p. 113–114. In this list, the female forms of professions also known for men have not been counted separately and professions that appear in two production groups have been counted only once. H. von Petrikovits has listed 27 Latin professions in the textile production from epigraphic and literary sources dating from Diocletian onwards (von Petrikovits 1981, p. 295–306).

18. See, for instance, Kendrick 1920 or Stauffer 1995 as examples for many other publications.

19. Purple is sent in: *P. Mert.* III 114 (with BL XI, p. 130, late 2nd century AD, Arsinoites); *P. Bingen* 74 (post-AD 130, Alexandria?); *P. Oxy.* VI 931 (2nd century AD, Oxyrhynchus); *P. Berl.Zill.* 11 (3rd century AD, unknown place); *P. Oxy.* XIV 1678 (3rd century AD, Oxyrhynchus); *PSI* IX 1080 (3rd century AD?, Oxyrhynchites); *P. Oxy.* XXXI 2599 (3rd/4th century AD?, Oxyrhynchites); *SB* XXIV 16269 (3rd/4th century AD, unknown place); *O. Florida* 16 (second half of 2nd century AD; Thebais); *P. Oxy.* XXXIII 2679 (2nd century AD, Oxyrhynchites); *P. Oxy.* XX 2273 (late 3rd century AD; Hermopolites?). It often cannot be decided whether the text deals with the colouring agent, coloured thread or a complete textile, especially when the amounts are missing.

A noteworthy text in many respects is the letter *SB VI 9025*, sent by Heraclides from one of the small oases to a certain Horion in Oxyrhynchus in the 2nd century AD.²⁰ The two writers evidently exchange both letters and commodities frequently; cereals, olive oil, legumes, olives and various fruits are the subject of their correspondence, and various messengers are involved in the transfer of the goods. Textiles and textile raw materials are also mentioned in the postscript of the letter. Herakleides was supposed to have procured for Horion a piece of clothing made of cotton (τὸν χιτῶνα τὸν ἐρεξόυλον), which he did not manage because of the haste required (the reason for which is unknown). However, he makes a suggestion to Horion: he could commission the weaving of a *chiton* instead, but then he would need to send the warp threads and measurements (στήμονα καὶ τὰ μέτρα). This is a proposal to produce a garment needed in the metropolis of Oxyrhynchus in an oasis a few days' journey away to the west of the Nile!

Another private letter of unknown origin, probably from the 2nd or 3rd century AD also records the request to send weft threads (κρόκη), which are needed for the weaver to start his work.²¹ Something similar appears in *P. Mert. III 114* from the Arsinoite nome.²² The author of this letter, a certain Achilles, orders a garment for himself from Sarapias and Thermuthis. The necessary threads for warp and weft come from different sources; while the women apparently made the wefts themselves, Achilles has acquired the warp threads elsewhere and now sends them to the women together with purple dye (πορφύρα) for the garment to be produced.

None of the preserved papyri provides evidence of a person procuring raw materials to make garments for third parties or that the textiles produced from these raw materials would be sold to third parties after their completion. Although an external acquisition of raw materials can indeed be established, the supplier is always the customer or his personally known middleman, and never a professional intermediary or merchant-entrepreneur.²³

Figure 1. Sketch of a tunic, woven to shape on a Roman two-beam vertical loom. (Drawing © Barbara Köstner).

High degree of standardisation

Another characteristic of the putting-out system, standardisation of the manufactured products, can also be questioned with regard to the textile production of the Roman Empire. Again, it is mainly the papyri that offer insights here. A papyrus in which measurements (τὰ μέτρα, *SB VI 9025*) for the garment to be produced are requested has already been mentioned above. This is an exception; in general orders for garments contain no measurements.

However, this does not mean that only quite uniform standard dimensions were produced. The archaeological finds clearly show varying lengths and widths in the preserved tunics.²⁴ During weaving, the warp is laid out; accordingly the tunics were usually woven in one piece and not usually tailored from several parts and adapted to the wearer like later garments.²⁵ The size of the finished textile

See also Worp 1997 and Bogensperger 2017. Raw wool is sent in *P. Turner 18* (AD 89–96?, unknown place; for the date, see Hagedorn 2001, p. 159).

20. Bagnall 2008; Reinard 2016, p. 912–919.

21. *SB XIV 12011*. For the date, see de Wit 1978, p. 81. Weft threads are sent as well in *P. Berl.Zill. 9* (AD 68, place unknown) and *P. Oxy. XXXI 2593* (2nd century AD, Oxyrhynchus).

22. Late 2nd century AD (with BL XI, p. 130); Messeri Savorelli 1995, p. 129–133.

23. See also Dross-Krüpe 2011, p. 173–174 and 206–207; Reinard 2016, p. 465–479; Dross-Krüpe 2019.

24. For a compilation, see Dross-Krüpe 2012b, p. 100.

25. Occasional Roman textile finds from Israel, Jordan and Egypt (e.g. Yadin 1963, p. 204–219; Cardon 2003, p. 642 and 654, fig. 336 [Z 22030–6], Huber 2013) as well as some depictions on mummy portraits from Graeco-Roman Egypt (British Museum, London, EA63397, early 2nd century AD; Kunsthistorisches Museum, Vienna, Antikensammlung X 303, AD 125–150;

was thus determined during weaving. The tunic could later be shortened by sewing a waist tuck or a hem. Occasionally some decorative parts could be made as an extra and applied subsequently.²⁶ Since the preserved tunics have significantly differing measurements, the approximate size of the future wearer seems to have been known to the weaver. This assumption is supported by the papyri, which show close personal relationships between client and weaver or dyer.²⁷ The papyrus noted above (*SB VI 9025*) is thus proof that measurements were only necessary in the case of a client who, like Horion, lives in another city and is unknown to the weaver.

Standard sizes would be most likely for orders of textiles from the government. *BGU VII 1564*, an order for textiles for the military, is the only text that lists precise measurements. The order contains:

- 1 white *chiton* (χιθὼν [= χιτὼν] λευκὸς ζωστὸς εἶς), belted, 3 ½ ells long, 3 ells and 4 daktyls wide, weighing 3 ¾ mines,
- 4 white Syrian cloaks (συρία λευκαὶ τέσσαρες), each 6 ells long, 4 ells wide, weighing 3 ¾ mines,
- 1 white blanket (λῶδις λευκὸς εἶς), plain weave, 6 ells long, 4 ells wide, weighing 4 mines.

In my opinion the fact that a government order for soldiers is the only list of exact dimensions for garments to be found indicates that this information was absolutely necessary to prevent the delivery of textiles of the “wrong size”. An explanation for this unusual specification would be in the absence of a close personal relationship between client and producer in the case of government contracts.

It can thus be noted that a formal standardisation in Roman textile production cannot be established. Although there were master patterns that served as a design aid to weavers and fullers, and colour samples could also be sent,²⁸ according to the papyri, garments were usually bespoke with the colour and material controlled by the customer.²⁹

Economic dependence and remuneration

There is no doubt that in Roman antiquity all artisans were dependant on their clients, but this condition is by no means limited to the pre-modern era. Nonetheless, indications that (textile) craftsmen would only produce for a single customer are completely absent. They apparently exercised their craft for various different clients and in their small and micro-enterprises they also engaged apprentices and employees.³⁰

They were obliged by the Roman government, which, as briefly mentioned above, could also appear as a client, to pay a trade tax, the *χειρωνάξιον*.³¹ This was paid *per capita*, but it differed in amount depending on the locality, gender and social status of the craftsman. The taxation of craftsmen is a strong indication of their professionalism and independence. There are many cases of garment orders by letter, although these letters do not clearly differentiate between business and private correspondence.³² It is not always possible to decide whether the garment ordered will be made in the household of one of the letter writers or in an external workshop. According to the known sources, however, no document speaks about the supply of a larger

Medelhavsmuseet Stockholm, NM Ant 2307–2309, undated) and hints in the literary sources (Varro, *ling.* 9,79 and Suet. *Aug.* 94) demonstrate that sleeveless tunics could alternatively be designed by using two identical loom pieces seamed together across the shoulders after having been taken off the loom; see Granger Taylor 1982. However woven-to-shape tunics can be detected until the 7th century AD; see also Pritchard 2006, p. 45, Mossakowska-Gaubert 2017, p. 321–322. I am very thankful to Barbara Köstner for generously sharing her knowledge about weaving tunics and for providing me with detailed references about the scattered evidence for tunics made of two pieces.

26. Paetz gen. Schieck 2002, p. 32–34.

27. Reinard 2016, p. 465–479; Droß-Krüpe 2016, p. 66–68.

28. Stauffer 2008, p. 11–12; Droß-Krüpe 2011, p. 159; Bogensperger 2016, p. 262–266.

29. Here the question arises as to how we should interpret the trading of large amounts of textiles. For example, *SB XVIII 13167* (2nd century AD) documents the importation of significant quantities of cloth from India. In addition, *graffiti* from Dura Europos illustrate that there was a significant trade in clothing under the auspices of Nebuchelos (*SB XVIII 13167*); Thür 1987, p. 229–245 and Thür 1988, p. 229–233, for Nebuchelos, see also Ruffing 2000, p. 82–90. Trading of a large amount of textiles across a customs border is also shown from *P. Oxy.Hel.* 40 (see Droß-Krüpe 2011, p. 78–86 with further literature). In all of these cases, however, the exact sequence from the order to the delivery of the textiles cannot be clarified. However, one thing can be stated with certainty: none of the texts provides any indication of the appearance of persons who act like merchant-entrepreneurs.

30. Droß-Krüpe 2011, p. 201–202.

31. Wallace 1938, p. 193–202; Reiter 2004, p. 111–144; Droß-Krüpe 2011, p. 193–196; Droß-Krüpe 2012a, p. 215–226.

32. See Reinard 2016, p. 57–126.

number of finished textiles, as would be expected for the putting-out system. Where the payment of wages is documented, however, it is always a price per unit, never per working hour.³³

Merchant-entrepreneurs outside of Egypt

Scholars have presumed the textile trade to be organised according to the putting-out system in other regions of the Roman Empire as well. John F. Drinkwater assumes the existence of merchant-entrepreneurs in the textile economy in the regions of Germania and Gaul.³⁴ He looks at the depictions on the so-called Igel column, a Roman tomb from the middle of the 3rd century AD in the village of Igel on the Moselle near Mainz. Drinkwater interprets the scenes from the textile industry depicted on the column as documenting the actions of a merchant-entrepreneur. He understands the Secundinii family from Igel, who had this tomb erected, to be textile merchant-entrepreneurs, who “die Rohmaterialien besorgten, die Herstellung des Garns und des Tuchs kontrollierten und überwachten und vor allem, [...] dafür sorgten, dass das Endprodukt bereitstehende Käufer fand”.³⁵ He bases this assumption on a diachronic comparison with the wool industry in Flanders, England and Italy between the 13th and 17th centuries. However, the transfer of the complex organisational processes of this medieval and early modern industry to Roman antiquity without the support of contemporaneous sources is methodologically problematic. As has been shown above,

none of the characteristics of the putting-out system appear in the documentary tradition in relation to the ancient textile industry.

On the contrary, both the papyri as well as in the archaeological finds for this economic sector attest to the existence of independent (small to medium size) producers.³⁶ Also, it cannot be indicated that the means of production were not the property of the respective producers in most cases.³⁷ The traditional interpretation of the Igel column, which regards the Secundinii as cloth merchants, is more likely to be true of the ancient conditions, even if they may have integrated earlier production steps into their value chain in the sense of a vertical integration.³⁸

In the end, none of the conditions formulated in the beginning for the development of a putting-out system could be found in the ancient sources on textile production. The often-repeated hypothesis that the production of textiles was organised within the putting-out system in Egypt and other regions of the Imperium Romanum, a system that had been widespread in the late Middle Ages and the early modern period in this sector, cannot be substantiated by the source material. Rather, it seems that the well-known putting-out system of the European textile industry between the mid-15th and the last third of the 19th century has been projected onto ancient conditions.³⁹ Reil, in whose work, as far as I can see, this hypothesis first appears, may have been familiar with this economic organisational form himself.⁴⁰ It cannot be ruled out that conditions from his own experience, or mechanisms that were

33. Dross-Krüpe 2011, p. 207–214.

34. Drinkwater 1977/1978, p. 107–125; Drinkwater 1978, p. 817–850; Drinkwater 1981, p. 215–233. In his latest paper on this subject (Drinkwater p. 2001, 297–308) he reconsiders some of the hypothesis suggested in these publications, but remains convinced that the Secundinii were merchant-entrepreneurs: “[...] they produced these fabrics in and around Trier, by recruiting and orchestrating a large and specialised, and therefore highly dependent workforce, of spinners, weavers, fuller, dyers etc., paid by the piece.” [298]

35. Drinkwater 1977/1978, p. 110.

36. See Drexhage *et al.* 2000, p. 103 and 108; Dross-Krüpe 2011, p. 151 and 188–189; Flohr 2014, p. 10.

37. The use of slaves appears to have played a minor role in ancient craft production. In some production sites, such as Arezzo, they were used in greater numbers in the production of *terra sigillata*, while slaves were hired only occasionally and for a limited time for (supplementary) work in La Graufesenque in southern Gaul. For Arezzo, see Delplace 1978, p. 55–76 and Prachner 1980; for La Graufesenque, Grenier 1938, p. 84–89 and Kiechle 1969, p. 78–81 and 90–94. For the low importance of slave work in Roman Egypt, see Ruffing 2013, p. 199–210.

38. According to (among others) Drexel 1920, p. 83–143 and Zahn 1982. Also see Broekaert 2014.

39. The putting-out system was not limited to textile production, even though it was strongest in this field of production, but was also found in metal ware, watch and woodwork production. See Sombart & Meerwarth 1923, p. 185–189.

40. Theodor Reil, born in Dresden in 1889 the son of a teacher and later school councillor, did not come from the agricultural or craft milieu himself, but the structures of the dominant merchant-entrepreneurs in his home region were very widely known at this time. Cautious estimates show that almost half of all industrial workers were active in this form of economic organisation in Germany at the beginning of the 19th century, with the number of people working from home even increasing in subsequent years. See Pierenkemper 1994, p. 15. For Reil himself, see his CV attached to his dissertation (Universitätsarchiv Leipzig, PhilFakPromo8279).

common in his time could have influenced his interpretation of the ancient texts.⁴¹

Excursus: the archive of Apollonius and the ἱστωνάρχης Chairemon

In addition to the putting-out system, production of textiles in large companies with a large number of dependent employees is also postulated for Roman Egypt, a hypothesis that relies heavily on the documents of the so-called Apollonius Archive. Apollonius, usually the recipient of the letters in this archive, which concerns both private and business matters, was *strategos* in the Apollonopolites Heptakomias *nomos* between AD 113/114 and 120.⁴² His family, which can be traced for five generations through documents of the archive, was based in the Hermopolites and owned large tracts of land there, which extended up the Nile into Lycopolites, the neighbouring nome to Hermopolites⁴³. Weaving was also practiced on the estates of the *strategos*, and many letters on the subject of textile production were found in the archive.⁴⁴ According to Wipszycka, the workshop of Apollonius is a prime example of a large Egyptian weaving mill.⁴⁵

In one of the letters of this archive, Chairemon, who calls himself ἱστωνάρχης and is at the estate of Apollonius, corresponds with the *strategos*. Apollonius, as we learn from *P. Giss.* I 12, had already sent Chairemon warp and

weft threads from which coats were to be made.⁴⁶ Chairemon now asks him to send an ἐντύπη, presumably a true-to-scale pattern drawing for the tapestry design to be incorporated into the textile.⁴⁷ The use of such patterns on the estate of Apollonius makes it clear that elaborate textiles made to customer specifications were produced here. As Annemarie Stauffer rightly points out, this weaving technique is particularly labour-intensive work that takes a long time and is therefore not economically efficient. The goal here can never be the rapid production of many textiles, as one would expect in an export-oriented weaving mill, but rather a focus on one complex bespoke individual piece.⁴⁸ As already mentioned, Chairemon refers to himself as a ἱστωνάρχης in *P. Giss.* I 12. This uncertain term appears in a group of Imperial papyri, which are mostly about the permission to weave robes that one (γέρδιος) ἱστωνάρχης allows or denies.⁴⁹ These permits are issued to persons who are not explicitly named as weavers: in one case another profession is even mentioned explicitly.⁵⁰ Ulrich Wilcken interprets the ἱστωνάρχης as “head of the weaving rooms”,⁵¹ however, this interpretation does not quite fit with papyrus *BGU* III 753, where a total of 3,670 drachmas of taxes are confiscated for the ἱστωναρχι(κόν). With reference to *BGU* III 753, Walter Otto suggested that said tax should be understood as income tax calculated in parallel to the χειρωναξίον on the basis of the income of a weaver, a thesis that was not generally

41. This form of organisation, while possible for other crafts (especially where mass production is possible) has not been verified anywhere in the ancient world, see Droß-Krüpe 2012b, p. 206–212.

42. Apollonius was the writer of only three of the letters, namely *P. Brem.* 3; *P. Brem.* 4 and *P. Giss.* I 41. For the office of *strategos*, see Oertel 1917, p. 290–299; Kruse 2002 and Dirscherl 2004.

43. See *P. Brem.* 11, preliminary remarks and the information in *P. Brem.* 20; *P. Brem.* 21 and *P. Giss.* I 10.

44. *P. Giss.* I 12; *P. Giss.* I 20; *P. Giss.* I 21; *P. Giss.* I 68; *P. Giss.* I 78; *P. Brem.* 45 and *P. Brem.* 63. See Wipszycka 1965, p. 81–88 and Kortus 1999, p. 192–193.

45. According to her, a workshop employing more than three or four people is already a “large workshop”. Wipszycka 1965, p. 81. E. Kornemann offers a different interpretation in his commentary on *P. Giss.* I 12 (comm. of line 1); he sees the workshop of Apollonius as a “cottage industry”, an idea that U. Wilcken picks up in his edition of the Bremer Papyri of the Apollonius archive (comm. to *P. Brem.* 63, p. 7–10).

46. For a reappraisal of the textile production on the estate of Apollonius, see Droß-Krüpe 2011, p. 155–163.

47. Stauffer 2008, p. 11–12.

48. *Op. cit.*, p. 12.

49. The terms ἱστωνάρχης or ἱστωναρχι(κόν) appear in the following texts: *O. Bodl.* II 1988 (1st to 2nd century AD, Thebes), *WO* 1154 (1st to 4th century AD, Thebes?), *WO* 1155 (1st to 4th century AD, Thebes?), *WO* 1156 (1st to 4th century AD, Thebes), *P. Phil.* 1 (with BL IX, p. 211, after AD 119, Arsinoites), *BGU* XV 2471 (with BL VIII, p. 61, AD 158, Ptolemais Euergetis), *P. Ryl.* II 98 (AD 172, Ptolemais Euergetis), *SB* XXVI 16365 (2nd century AD, place unknown), *O. Wilb.* 75 (with BL VI, p. 214, end of 2nd century AD, Thebes?), *BGU* III 753 (after AD 245, Arsinoites), *P. Oxy.* LXVII 4596 (AD 264, Oxyrhynchus), *O. Bodl.* II 1990 (3rd century AD?, Thebes), *P. Wash. Univ.* I 35 (with BL IX, p. 372 and XI, p. 289, 4th/5th century AD, place unknown); see also Droß-Krüpe 2016.

50. *WO* 1154.

51. *WO* 1154, comm. on line 1.

accepted, especially as income taxes could not be corroborated with other craft workshops with certainty.⁵² Reil, on the other hand, considered seeing the ἱστωνάρχης as the head of a larger weaving mill, who probably also practiced this profession himself.⁵³ As a second possibility, he considered that these persons, possibly in the function of a trader or merchant-entrepreneur, “concentrated” domestic textile production.⁵⁴ Axel Persson judged the tax quite differently in view of papyrus *P. Ryl.* II 98, which had then been recently published and had not been available to Wilcken, Otto and Reil. On the basis of the request made in the papyrus by Heron to send 300 drachmas per year for εἰστωναρχίαν in the village of Archelais, he suspects that the ἱστωνάρχης acquired the right from the government to weave in a certain area, and then leased it on to after-tenants [= subcontractors?]; he sees *BGU* III 753 as the list of lease sums of ἱστωνάρχης.⁵⁵ For Sherman Wallace, an ἱστωνάρχης also has the supervision of the looms of a region, a right that is obtained for 300 drachmas a year in *P. Ryl.* II 98. In Thebes (and only there) he also possessed the possibility to issue a permit or a ban on the construction of a loom and thus on weaving.⁵⁶ An ostrakon of unknown provenance, which was included under the number 16365 in the *Sammelbuch der griechischen Papyrusurkunden* (*SB* XXVI) fits perfectly with these ideas of Persson and Wallace.⁵⁷ The document confirms the payment of four drachmas from Tryphon for the month Epeiph. The sum was paid ὑπὲρ ἱστ[ων]άρχου. This seems to be the payment of an individual, namely Tryphon, to the ἱστωνάρχης. In my opinion, the fact that this payment appears to be in monthly instalments, and thus on a regular basis, supports the view of the ἱστωνάρχης as the administrator of a re-leased monopoly on weaving for a particular area. Wipszycka also sees a connection to a monopoly, but interprets the task of an ἱστωνάρχης differently, namely in the granting of permits to “produce textile in one’s own household, which was not subject to the χειρωναξίον, charged only from professional craftsmen. He bought the right to collect fees for the issue of permits from the state on auction (*P. Ryl.* 98);

he pays the previously calculated sum into the state treasury (*BGU* 753).⁵⁸ The basis of her hypothesis is the observation that the concessions of the ἱστωνάρχης are usually given to a woman or to a man who has a different profession than that of weaver. In her opinion, the high sum of *BGU* III 753 is explained by the fact that every person who wanted to produce textiles in his own household without exception, first had to obtain the permit of the ἱστωνάρχης and pay for it. Although the preserved documents do not contradict this hypothesis, the question of the feasibility of such an endeavour has to be asked. The compulsory obtainment of permits for the manufacture of textiles for any non-professional weavers, that is for all persons not subject to the χειρωναξίον, entails the compulsory control of these weaving licenses, a process that would have been quite complicated and that does not show up in our sources. It also is difficult to imagine that every household producing a coat or tunic for itself should be subject to a special levy, as there are no other types of taxation attested for home production: we only have to think of making cheese or slaughtering livestock.

An exception is the brewing of beer and the associated tax of ζυτηρὰ (κατ’ ἄνδρα).⁵⁹ However, central to the name of this tax is the addition κατ’ ἄνδρα, which expressly identifies a tax rate *per capita*. Unlike the ἱστωναρχικόν, the beer tax, which probably had to be paid for the home production of the beverage, is expressly characterised as different from other tax types by this addition.

The multitude of proposed interpretations of the term ἱστωνάρχης clearly shows how difficult it is to grasp. However, the documents allow us to state with certainty that an ἱστωνάρχης can also be a weaver at the same time, and may have employees and can train apprentices.⁶⁰ In addition, he grants permits, which allow various persons who are not explicitly named as weavers and in some case are explicitly named as craftsmen of other professions, to weave in any location within a certain district. Different terms are used in the documents, but never explicitly the verb ὑφαίνειν – to weave.

52. Otto 1905, p. 301–302, note 5.

53. Although Wipszycka (1966, p. 16) claims that Reil assumes that the ἱστωνάρχης was therefore also obliged to pay a higher amount of tax, this reference is missing from Reil’s own argument. He sees the ἱστωναρχικόν as a business tax, which, also in view of *BGU* III 753, had to be paid by the ἱστωνάρχαι in addition to the normal weaver’s tax; see Reil 1913, p. 108.

54. Reil 1913, p. 108.

55. Persson 1923, p. 23–25.

56. Wallace 1938, p. 199.

57. See Nachtergaele & Pintaui 1981, p. 171–173.

58. Wipszycka 1966, p. 18. Wipszycka’s interpretation is also used by Kortus 1999, p. 194.

59. See Reiter 2004, p. 145–164.

60. Employees: *BGU* XV 2471 (c. AD 158, Ptolemais Euergetis); apprentices: *P. Oxy.* LXVII 4596 (mid-3rd century AD, Oxyrhynchus).

The relation with the putting-out system postulated by Reil must be refuted, since no proof can be found for this economic organisation in Roman textile economy, at least in Egypt. As unsatisfactory as this may be, a convincing solution for the function of the ἱστωνάρχης cannot be offered here either. He certainly belongs in the context of textile economics, but what exactly his duty was and whether it was just a single, well-defined task cannot be determined with certainty at the moment. However, in spite of the uncertainties outlined, in my opinion the assumption that the ἱστωνάρχης acquired the right from the state to practice professional weaving, expressly not for the household's own consumption, in a given region,⁶¹ then in turn issued licenses⁶² for weaving and collected money for them from individuals⁶³ is perfectly compatible with the documentary evidence. In any case, the fact that Chairemon calls himself an ἱστωνάρχης in his letter to Apollonius does not justify the assumption that Apollonius owned a large weaving mill or that Apollonius' intermediary Chairemon was a kind of merchant entrepreneur.

Conclusion

As the above considerations show, neither the organisational form of the putting-out system nor the production in large, proto-industrial workshops are attested for Roman Egypt and its textile economy. In contrast, small workshops and a system of vertical disintegration dominate, placing the customer, and not an entrepreneur, at the centre.

Abbreviations

All papyrological works and all references to papyri, ostraca, etc. follow J.F. Oates, R.S. Bagnall, S.J. Clackson, A.A. O'Brien, J.D. Sosin, T.G. Wilfong & K.A. Worp (eds.), *Checklist of Greek, Latin, Demotic and Coptic Papyri, Ostraca and Tablets*. Available at: https://library.duke.edu/rubenstein/scriptorium/papyrus/texts/clist_papyri.html (continually updated)

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61. *P. RyI*. II 98 (AD 172, Ptolemais Euergetis) and *BGU* III 753 (after AD 245, Arsinoites).

62. *O. Bodl.* II 1988, *WO* 1154, *WO* 1155, *WO* 1156, *O. Wilb.* 75 and *O. Bodl.* II 1990.

63. *SB* XXVI 16365.

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