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Chapter 3

The Silken Tug-of-War in Eighteenth-Century Lyons: The Gendered Nature of Knowledge in the *Grande Fabrique*

Daryl Hafter

The sumptuous and intricate fabrics woven in eighteenth-century France called forth admiration and praise from consumers of the time and have been inducing the same reactions in textile historians ever since. Far less interest, however, has been afforded to the makers whose largely under-appreciated professional knowledge was an essential component in the making of these extraordinary textiles. This chapter focuses on the skill of the silk workers and the effect that their knowledge had on their technical, economic, and political status within the industry.

The *Grande Fabrique* was a premier center of preindustrial technology, consisting of some 35,000 workers spread throughout eighteenth-century Lyon. According to the historian Maurice Garden, there were 5,575 master weavers, 1,796 journeymen, and 507 apprentices—all men. Working alongside them in families were around four thousand wives and 5,500 children.¹ However, some 30,000 female auxiliary workers did sixty percent of the industry's work—spinning, reeling, warping, pulling down cords, and preparing the silk threads for weaving.² These auxiliary workers were integrated into the guilds as wage laborers, forbidden to advance or attain the prestigious title of master of weaving.

For most of the workers in Lyons, their skill was their capital and their pride. Signalling the precious materials they worked with, they called their guild the "Communauté des maîtres marchands et maîtres ouvriers fabricants en étoffes d'or, d'argent et de soie" (Community of master merchants and master weavers of gold, silver and silk fabrics). Master weavers owned their looms, auxiliary female workers had their tools, but what they all relied upon was their proficiency with the expensive luxurious materials. One of the ironies in the Grande Fabrique was the disparity between the exorbitant cost of the product, and the humble and precarious livings of the silk workers themselves. Despite this fact, silk workers valued their own technical specialisation and were proud of it. During the French Revolution (1789–99), when the silk industry was in decline, spinners refused the charitable expedient of spinning other fabrics such as linen, cotton, or wool, claiming that their life-long experience with silk had left them unsuited for any other kind of work.³ Master weavers and the auxiliary women workers were under the direction of the wealthiest segment of the silk industry, the master merchants, or maîtres marchands fabricants. These merchants ranged from renowned international firms to modest local traders struggling to maintain their independence. The tension between master weavers and master merchants, the two dominant

¹ Garden 1970b, 53-4.

² Pierre Cayez estimated that 69 percent of silk workers were women. Cayez 1978, 44.

³ Hafter 2007, 259–89. For information on the silk industry during the Revolution see Hafter 2007, 271.

groups within the *Grande Fabrique*, brought the importance of specialized knowledge to the fore ⁴

Master weavers relied on the codified information in guild regulations to maintain their status and to exclude "unlicensed" workers who had not become certified through apprenticeships. Yet, the industrial regulations equally served as a bulwark against the master merchants' attempts to dominate the master weavers. The weaving instructions in these guild regulations would provide the arena for political contests within the *Grande Fabrique*. In 1744 the master weavers lost the right to take direct commissions from outside buyers; instead they could only receive orders through the master merchants whose role it then was to negotiate price and work. This would have reduced the master weavers to the position of hired proletariat if it had not been for their insistence on equal guild status. The guild regulations validated the master weavers' existence; they alone could interpret the intricate rules, and then only after training and certification. This became another bone of contention resulting in the master merchants on one side seeking to produce novel varieties of cloth, while on the other, master weavers clung to the classic forms.⁵

3.1 Contracts and Creations

In this era of bespoke commissions, no contract was a routine affair; each project was the result of negotiation between the merchant and the weaver. For master weavers, each individual contract rested on their understanding of the loom and its product: for "cloth of one-color" (étoffes unies), the discussion could be relatively simple; for "cloth of mixed fibres, stripes, and plaids," there might be a lengthier conference; for brocades, the prize textile of the *Grande Fabrique*, negotiations could be quite complex.⁶

Original brocade patterns might have started with a conversation between a merchant and a designer about what motifs and color scheme were likely to be attractive to the consumer; if the client were royalty or in a high clerical office, special designs would be ordered. If not, the designer would be free to make his or her own suggestions. Perhaps a sketch or two might have got the process going. Then the designer, or an assistant, would actually represent the scene by painting it. This artisan would brush transparent colors onto stiff paper so that a grid representing the warp and weft showed through, making a *mise-en-carte*. At this point, if not before, the master weaver needed to scrutinize the picture to ascertain how difficult it would be to realize on the loom. No doubt, adjustments to the design were made at this time, as the master weaver calculated the time and materials required for the job.

All designers needed to be extremely familiar with the technical craft of weaving. The best ones understood both the capacities and difficulties of the loom, and they adapted their paintings appropriately. Given the horizontal and vertical structure of fabric, the most difficult forms to weave successfully were circular ones. The fame and success of the early eighteenth-century designer Jean Revel (1684–1751) came in part from his ability to design circular forms that could be woven with some degree of accuracy. In addition, Revel invented a form of weaving called "points rentrés" or "berclé," in which the fabric resembled

⁴ For details see Pariset 1901.

⁵ The classic account of this struggle is found in Godart 1899.

⁶ Such negotiations were reflected in the complicated commerce according to Miller 2014, 85–98.

a sort of "line engraving" (*taille douce*), giving the illusion of depth to brocaded figures. Aileen Ribeiro described Revel's technique as consisting of:

[...] modeling in dark and light and dovetailing tones of color, which meant that instead of just a surface pattern on the silk, three-dimensional forms could be represented with greater subtlety and almost overwhelming realism. Flowers in full bloom and gargantuan fruit were woven into huge repeats, as much as twenty-eights [sic] inches or longer [...].⁷

Contemporaries, like Joubert de l'Hiberderie, called Revel "the celebrated artist to whom the "fabrique" owes its lustre and the splendor with which it shines today." Apparently Revel excelled in demonstrating his designs with precision on the mise-en-cartes that guided the weaver, and before him, the liseuse who made up the cordage to program the loom. The weaver would then intersect two weft threads adroitly in certain parts of the design, in order to achieve the effect of gradation and depth.

Other designers too achieved status by grappling with technical problems that showed their intimate understanding of textile manufacture. When "watered" silks became fashionable mid-century, brocaded cloth would be treated to the shimmering process after having been woven. L'Hiberderie, a designer himself, suggested weaving two identical lengths of silk and binding them together, so that they could go through a calender flat, in order to avoid the usual fold that could never be erased from the material.

The premier designer of the last quarter of the eighteenth century, Philippe de Lasalle (1723–1804), made stunning, much admired, large, naturalistic, fluid designs, many of which covered Catherine the Great's (1729–96) palace walls. Since the cost of gold and silver thread increased the price of the fabric, every designer had to face the challenge of how to create impressive cloth while economising on materials. De Lasalle received praise for his parsimonious use of gold and silver, substituting chenille for the precious metals.

Even cloth of one color required a skilled hand to manufacture. As Natalie Rothstein wrote, "Before the advent of the Jacquard, different types of silk required different arrangements on the loom and master weavers specialized in producing them." The *armure* of taffeta, satin, crepe, twill, and other silks each required entirely different mounting on the loom.

Moreover, although master weavers were able to turn out a variety of silk types, there were other specialized trades within the *Grande Fabrique*. Notable is the group of *passementiers* that produced ribbons, decorative braid, tassels, netting, tulle, and gauze. This trade alone in the *Grande Fabrique* had always had female masters. By the end of the eighteenth century, when light garments were in style, this was the only group to thrive. Many a brocade weaver tried to push his way into the *passementiers*' guild, hoping that his pitiable pleas about children starving at home would grant him access.

⁷ Ribeiro 2002, 41–2. See also Thornton 1965, 118–22.

⁸ de l'Hiberderie 1765, cited by Algoud and Brochier 1986, 123–27. Revel's method strove "[...] pour obtenir des demi-teintes intermédiaires, augmentant de beaucoup l'effet de ce modelage, d'entrecroiser, de mélanger en quelque sorte dans certaines parties du dessin, deux nuances de trames, de les fonder dans une droite dégradation ou *rentrure*."

⁹ Rothstein 2003, 549.

3.2 The Grande Fabrique and Invention

The Communauté des maîtres marchands et maîtres ouvriers fabricants en étoffes d'or, d'argent et de soie was perhaps unusual in the eighteenth century for being a guild that continually produced inventions. It was a laboratory for developing new tools and testing them. The collective system of developing new devices, and of vetting those machines, was in the hands of the master weavers and master merchants themselves. ¹⁰ The best example of this is the long process of solving the problem of enabling a solitary brocade weaver to weave ground and pattern without relying on an auxiliary worker to advance the pattern. From Basil Bouchon's roll of pierced paper in 1725 to the pierced cards of Jean-Baptiste Falcon in 1728, from the 1745 cylinder of engineer-inventor Jacques de Vaucanson (1709–82) and its imitators, to the removable semple of the designer Lasalle, and finally Joseph Marie Jacquard's (1752–1834) device introduced in 1801, dozens of large and small inventions flowed from Lyon. It was the master weavers who recommended their new devices to the king, as they applied for subsidies and the status of royal manufactures.

The guild officers were acknowledged to be the experts; their reports demonstrate their rigour in judging applications for royal support. They were candid in ruling when the device did not work as well as the applicant claimed, or if its function was so close to a current device that it did not show enough originality to be called an invention. Lyons's Academy joined the assessment process. The workers themselves demonstrated that Vaucanson's rotary cylinder for fixing a design was too awkward and too limited to be practical for brocades. Savants in the Royal Academy in Paris also relied on the judgment of Lyons's institutions. 11

While it was logical for master weavers to undergo an apprenticeship in loom technology, merchants in the Silk Weaving Guild were also required to become accredited in weaving before they set up business. Even the merchants' sales representatives had to know quite a bit about the technical possibilities of silk making in order to successfully deal with prospective customers. Itinerant agents of the prestigious Pernon company were faulted if they were not perfectly aware of what the loom could and could not do. The traveling representatives became mediators between the keepers of the warehouses in Paris, Lyons, and other silk centres, the silk producing firms, and the clients. As they displayed their samples in warehouses in Paris and at courts in Madrid, St. Petersburg, or the German states, the traveling salesmen received numerous demands for particular colors, sizes, and even changes in design. They did send enquiries back to Lyon, but the home firm would not have appreciated requests that were clearly impossible to fulfil. Such a lack of technical knowledge would have undermined the whole marketing process. While warehouses maintained the practice of stocking some textiles already dyed and woven, there was a much more fluid interchange between making and buying in the rarefied markets of aristocrats. Since weavers held off beginning new projects until they had firm orders, there was a premium on settling these details promptly. 12

These elements of business became ever more problematic as new fashions accelerated the pace of design changes.¹³ In the late seventeenth century, the previously fashionable

¹⁰ See Hilaire-Pérez 2002 discussing merchants' influence on new technique.

¹¹ For an analysis of weaving inventions, tracts promoting them, and officials' opinions see: Hafter 1979. See also: Hilaire-Pérez 2008. An early account is Ballot 1978.

¹² For analysis of business practices in the Grande Fabrique see: Miller 1998.

¹³ For a path breaking study see: Poni 1997.

small patterns with stripes were gradually abandoned in favor of larger, more exotic patterns. This caused a drastic change in the technology required and indeed, in the business of silks. While the small patterns could be woven on looms with shafts, the larger and more elaborate patterns required a draw loom. The simpler looms were relatively easy to manage, but the draw looms were a much more complicated proposition. Silk workers of the time estimated that each draw loom required some five operators, the weaver, drawgirl, and three others to clean and process the material. Although brocades woven on draw looms were more profitable than simpler weaves, the master had to calculate whether his workshop could accommodate and afford the salaries of the five workers necessary for each loom. In addition, mounting a loom for brocade took weeks; when the weaver came to the end of one contract, the loom stood idle while it was restrung for the next project.

In 1666, Controller General Jacques Colbert (1619–83) issued strict regulations stating that a fabric should consist of only one material in order to curtail fraud. But since there were only four materials available for use in the Old Regime—silk, wool, cotton, and linen—it was natural that weavers combined them for variety's sake. No doubt each silk centre experimented with different material combinations despite the ruling. Even more amalgamations emerged as weavers learned through imported wares from far off sources. In time the names of particular cloths like *bergamino*, *siamoise* etc., no longer referred to the place of origin, rather to the specific type of cloth. ¹⁴

This growing array of illegal weaves offered a tremendous increase in the range of goods. More importantly, from our perspective, the significant examples that escape from the straight jacket of the restrictive regulations at the time are the result of the skilled daring of some weavers. This is not the first time that the law tried to restrict knowledge. Any of the amalgams that weavers produced, like "false gold," increased the master weaver's margin of profit, and perhaps allowed them to sell the goods for lower prices increasing their potential market.

3.3 The Sociology of Weaving: Gender Politics in the Grande Fabrique

Knowledge was a precious object in silk making, and its ownership followed the structure of society at that time. As the group with the lowest prestige, women—whose legal status was equivalent to that of minors—had legal access to the least prestigious techniques. Throughout the array of trades in eighteenth-century France, women worked at jobs that were considered unskilled and their pay was commensurately low. Although many guilds prevented women from becoming full members, virtually every workshop had female workers, cleaning, carrying, and performing routine tasks. They were integrated into every industry, and gradually took on tasks that required adroit hands. But because most women did not have the "authorisation" of formal guild training, irrespective of the job they were doing, they continued to be considered unskilled. The gender-specific divisions of labor in the Old Regime perpetuated these norms: complex, machine-oriented work for men; routine, handicraft work for women.

The silk industry followed these practices in theory, giving the most complicated and prestigious tasks to the male guild masters. "Sitting at the loom," especially weaving brocades, held pride of place in the *Grande Fabrique*. This was the preserve of men. Thus, although many non-guild free crafts considered weaving by nature to be women's work,

¹⁴ Hilaire-Pérez 2002.

the high-tech and capitalist *Grande Fabrique* of Lyon restricted the skill of weaving to a privilege. The largest group of women workers, some 30,000, worked as cocoon tenders, throwers, spinners, cleaners, bobbin winders, warp technicians, drawgirls, and all the other auxiliary tasks that silk weaving required. But, unless they had family ties to master weavers, they were forbidden to weave. In Lyon, weaving knowledge became a commodity that was used to influence and to control the industry.

At the beginning of the trade in 1466, in order to encourage silk manufacture in France King Louis XI declared that any person would be welcomed into the trade, whether secular or religious, male or female. As a further inducement, the wives of master weavers and women in training were permitted to weave. Indeed the earliest guild regulations assumed that a master would have four looms, one of which would be operated by his wife and another possibly by a journeywoman or *compagnonne*. Therefore weaving knowledge did not start out as an exclusively masculine domain, but became so with the commercialization of the process and subsequent regulations.

But it soon became a prize that was fought over in the tug-of-war between the master workers and the master merchants. Weaving was a more lucrative task than most women's jobs, and it offered the master worker's family crucial financial support in the fluctuating silk industry. One could say that in this trade, knowledge equalled profit. In 1561, when silk making became a guild, weaving as a skill became the exclusive domain of the male masters. It was considered a *privilege* that might be extended to a woman who was related to the master, or to a journeywoman trained by him. The right of a woman to sit in a man's place fluctuated with economic cycles and the relative power that the master workers had in the guild. ¹⁵

After originally allowing women to weave, the regulations of 1569 prohibited even females in guild families from weaving while later rules once again authorized female weaving. In subsequent years, a reduction in work caused the master workers to suspend access to mastership to men from a different region who married daughters of masters; but the daughters maintained their right to weave. By 1686, journeymen could once again attain mastership by marrying the widow or daughter of a guild master. The regulation specifically authorized the wife to work at one of the two looms. It offered the license emphasizing the equal contribution of wife and husband, authorising "la franchise nécessaire pour occuper deux métiers, et y travailler tant le mari que la femme" (the license required for both husband and wife to occupy two trades and work in them). In

As the silk industry expanded, the guild was torn by conflict between the master workers with only four looms and the wealthy master merchants, eager to hire numerous workers for large-scale production. Participating in international commerce, the wealthy master merchants, who did no weaving themselves, had businesses that employed some indigent male weavers and many more females. Guild regulations indicate that it was becoming normal for women to become weavers, not only at home but also in the workshops of masters with whom they were not related.

The regulations of 1703 specify that if the daughters, wives, and widows of masters worked outside the home, they must show documents proving that they were related to silk masters. Journeymen and their wives (no longer called *campagnonnes* or journeywomen)

¹⁵ Details of these activities may be found in Pariset 1901, and Godart 1899.

¹⁶ Jacques 1948, 114.

¹⁷ The italics are mine. The guild disputes are detailed in Hafter 1995.

also found places with *maîtres ouvriers* other than those who were their original masters. Even women in the families of journeymen who had been classified as "foreign" (coming from outside Lyon), were allowed to weave as long as "they had been registered in the guild's book of workers." It is clear that women with no family tie to guild masters were also infiltrating the workshops.¹⁸

The volume of business done by the wealthy master merchants gradually suppressed the small master weavers' status both economically and politically within the guild. The original practice of a master with a family workshop to make his own contracts with customers, or to use small merchants as intermediaries, declined as wealthy merchants took over a larger share of the available business. Master weavers found themselves cut off from direct access to commerce and profits. Some could no longer manage their own workshops and had to take wage work from larger or more prosperous competitors. The small merchants also slipped down to the level of master weavers, as they were forced to support themselves with wages earned from their own labor rather than sales.

In their struggle against the wealthy merchants, the *maîtres ouvriers* and their journeymen joined with the small merchants to petition the king for new regulations that would be more favorable to them. The new bylaws of 1737 advantaged those with small family workshops, rebalancing the governing roles by authorizing four master *gardes* representing weavers and four from the merchants. Master weavers were given the explicit right to "produce or be responsible for production for all sorts of persons, merchants, and others, who wish to place orders whether for their own use, or even to sell," as long as these persons were members of the guild. ¹⁹

But the new bylaws also recognized the subordinate economic position that master weavers found themselves in, stipulating how they, like their wives and widows, might work for wages in the ateliers of other masters. The rule declared, "Masters who work at the dwellings of other masters, in the status of journeymen, just like their wives or widows, are held to conform to that which has already been prescribed for journeymen." Even while they were trying to regain control of contracts and finances, the *maîtres ouvriers* were publicly recognized as falling into the condition of journeymen. Under these conditions, the likelihood of wives and daughters bringing funds into the family became a matter of survival.

Yet the master weavers' relatively impotent position, described in the 1737 regulations, was still not enough for the large-scale merchants. The regulations of 1744 tightened the screws even further and put the 300 wealthy large-scale master merchants firmly in control. New guild by-laws set the tax of hiring one master to weave for another at the exorbitant rate of 800 *livres*, and placed a fee of 200 on any master who changed his classification from weaver to merchant or vice versa. The master merchants finalized their control by successfully lobbying Paris to forbid the master weavers' wives to weave outside the home.

¹⁸ Archives Municipales de Lyon 1720.

¹⁹ Archives Municipales de Lyon 1720, "Lettres patentes du Roy, Pour l'exécution du règlement conçernant les Manufactures des étoffes de soye, or, et argent, de la ville de Lyon, et la communauté des maistres marchands et fabriquants desdites étoffes," Fontainbleau, 1 October 1727, Title LX.

²⁰ Archives Municipales de Lyon 1720, "Les maistres qui travailleront chez d'autres maistres, en qualité de compagnons, de mesme que leurs femmes ou veuves, seront tenus de se conformer à ce qui est cy-devant préscrit pour les compagnons," "Lettres patentes," Title CLXXVIII.

²¹ Archives Municipales de Lyon 1720, 704.603, "Arrest du Conseil d'État du Roy," "Qui ordonne l'exécution des Statutes et Règlements pour les fabriques de Lyon," 19 June 1744.

The one privilege the weavers held onto was the freedom for their daughters (and sons) to "sit at the loom" for any master. This long-held practice was confirmed as a charitable gesture rather than a legal right. Each daughter's permission to take employment outside the family came after a formulary plea for work in order to help their poor or aged parents. Ironically, despite having no independent rights of their own, the daughters brought one-third more revenue into the family than the sons.²²

Widows' rights to weave seem to have received no impediment. The widow's privilege was founded on the tradition of gaining skill by hands-on learning within the guild family. In addition, as guild masters insisted when negotiating with reforming ministers later in the century, mastership was a class of property certified and paid for by the guild master. It was therefore inherited by his widow who acted as the proxy for her husband under such circumstances. In practical terms, a widow might hold the workshop open until her son or daughter came of age to claim mastership. Moreover, a working widow could feed her household and avoid the disreputable position of prostitution or becoming a charge on the parish. In theoretical terms, here was another example of a woman taking on masculine knowledge and position, under the aegis of guild allowance and life situation.²³

However, the guild family's power to imbue females under its jurisdiction with skill did not mean that just any woman would be awarded the chance to weave. This became absolutely clear when reforming ministers sought to open the guilds to women. Pursuant to regulations that reshaped the guilds from 1779–81, royal administrators finally insisted in 1786 that the Silk Weaving Guilds' masterships should be open to women. According to these instructions, girls and women who had been drawgirls, bobbin winders, or other auxiliary workers should be given apprenticeships that would result in their achieving masterships for weaving. The *maîtres ouvriers* objected strenuously to this rule. They had already dragged their feet in responding to the government's command that they reformulate their various crafts into separate guilds and pay a second tariff to restore their masterships. Now they fell back on essentialist excuses to disqualify women unrelated to guildsmen from weaving.

Women outside of guild families had neither the training nor the temperament to weave, according to the masters' petitions against the new rule. It would take ten years at least to instruct these apprentices, and even then it was doubtful that they would become proficient in the craft. According to the barrage of tracts circulated by silk masters, the problem was that women were simply not suited to being weavers. Their hands were too small and delicate to manage the implements. They were not strong enough to work the pedals or the shuttle (this claim comes at a time when drawgirls were spending fifteen-hour days pulling down 60-pound weights!). The complex system of mounting the looms according to requisite designs was beyond their intellectual capacity. They would be incapacitated several days of the month and the speed of production would suffer. Finally, it would be unseemly for them to climb up to the top of the loom, which was sometimes necessary when the cordage became tangled, because few *ouvrières* wore underclothes.

Of course the real underlying problem with allowing these women official access to the mastership was that their low salaries and competition would undercut the master workers

²² Documentation of daughters' work is found in Register, "Permissions Accordés," Archives Municipales de Lyon 1720, HH 586. See also Godart 1899, 169–72.

²³ Maurice Garden found that most widows in the Silk Weaving Guild were so poor that many were exempt from paying taxes. See Garden 1970a. For a wide-ranging treatment of guild widows see: Lanza 2007. Other independent female economic roles are shown in Hafter and Kushner 2015.

and cause "the fathers of families to lose their jobs and throw their children into destitution," as weavers complained. Journeymen protested that, "in hard times especially, the masters would give the women preference. They alone would be hired, and the men would have no other choice but to leave the country." They warned that so few journeymen would be left, the *maîtresses ouvrières* would have trouble finding husbands.

The master weavers had another objection. They feared that the merchants would staff their workshops with non-guild women, driving down salaries of their own daughters and completely ignoring family workshops. This was particularly egregious since the workshops of small-scale master weavers, as well as the large workshops of master merchants, were filled with so-called "untrained" women. (Their complaints were a bit like the laws prohibiting the import and use of calicos—which were written and signed in rooms with chairs and drapes of that material.) Pressed by the merchants and by economic cycles, the small master weavers were already illegally using spinners, drawgirls, and other auxiliary female workers to increase their output. No doubt the intimacy of the family workshop, where women and men toiled together, facilitated this illicit work. Considering that the master weavers themselves had instructed their domestic workers in weaving, their denigration of female capacity was especially meretricious.

3.4 Conclusion

Contrary to the analysis of scholars who locate knowledge in pure science or realms of the academy, study of Lyons's silk industry underscores the vital necessity of understanding every aspect of manufacture. From the first conception of a cloth through to its production and sale, intricate technicalities needed to be mastered. These skills took the form of privileged knowledge, linked to guild training. As economic conditions grew more difficult, this knowledge became gendered male, and survival in the industry came to depend largely on gender politics. In this trajectory, the silk industry followed the European early modern evolution from artisanal guild production to a capitalist separation of patrons and labor.²⁶

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²⁴ This comment was aimed at the drawgirls who were slated to become masters after a ten-year apprenticeship. Archives Municipales de Lyon 1720 HH 572, "Avis conçernant les tireuzes de cordes," "Livre de Déliberations de la Grande Fabrique."

²⁵ Garden 1970b, 29–32, 53–4, estimated that by the century's end there were 1,015 women weaving illegally.

²⁶ For an example of this dynamic see de Vries and Woude 1997.

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