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THE RISE AND FALL OF HARMONIC GUT-STRINGS IN 18<sup>TH</sup> CENTURY NAPLES:  
STORY OF THE ANGELUCCI FAMILY

SHAYNA MUCKEHEIDE

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THE RISE AND FALL OF HARMONIC GUT-STRINGS IN 18<sup>TH</sup>  
CENTURY NAPLES:  
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1. *Introduction*

The richness of Naples and the important intellectual, religious, artistic, legal, and scientific developments that emanated from this populated ancient city have been largely underappreciated in western European thought, particularly in English-language studies. Recent research has begun to reveal how Naples was one of the leading European cities of the early modern period, especially during the later eighteenth century. The French-Spanish Bourbon monarchy supported cultural arts, promulgated Catholicism, and spurred philosophers and scientists to question the condition and workings of humankind. The southern Italian capital became a center for opera and music, religious fervor and debauchery, archeological and artistic inquiry, and medical and scientific study.

One industry that Naples excelled in was that of *cordari di budelle*, in which master craftsmen turned the intestines of sheep into quality harmonic strings for instruments. These tradesmen mostly hailed from the Abruzzo region near L'Aquila where the sheep were smaller and grass-fed, resulting in higher-quality strings. Naples, along with Rome, became renowned among musicians – including violin virtuosi – for producing the best gut strings. Unfortunately, this Abruzzese craft and point of pride for Naples – even the existence of gut-strings – were nearly lost until the latter twentieth century.

Domenico Antonio Angelucci and his son Martino Angelo were once the most important gut-string masters in eighteenth-century Naples, Martino Angelo's *chantarelle* strings highly prized by musicians throughout Europe. Martino Angelo's improvements to the process of turning intestines into strong, sonorous strings was a major breakthrough in harmonic music performance that brought him fame, particularly in Italy, France, and Germany. Much of our knowledge about antique gut-string fabrication is also thanks to the explanation that Martino Angelo shared with visitors to Naples more than 250 years ago. He provided one of the earliest detailed accounts of the process that other makers found difficult to replicate, before the Angelucci family fell into obscurity themselves.

The Angelucci family's gut-string business once brought fame and fortune to Salle and Naples, as these *cordari* propagated Enlightenment ideals professionally while enduring personal tragedies. Their family story and contribution to the craft of stringed instruments deserves to be remembered, recognized, celebrated today, especially in Naples and Salle. It is the story of perseverance, prosperity, poverty, the twisting of life like a string, rekindling a lost family and craft, reigniting interest and memory.

ASDNa Naples, Archivio Storico Diocesano  
ASNa Naples, Archivio di Stato

All translations by the author.

## 2. Italian Harmonic Strings

The transhumance of sheep and goats served as the economic basis for central and southern Italy since the time of the eastern Italic tribal inhabitants to the modern era. L'Aquila area, between Sulmona and Chieti on the slopes of Maiella mountain, was a central location for Italian sheep-farming, shepherding, and their derivative businesses<sup>1</sup>. Their smaller breed of sheep had intestines that produced high-quality chantarelles, the most highly stressed strings, noted as early as 1574 by French lutenist Adrian Le Roy. The "trueness" and strength of these harmonic *corde* made by craftsmen from the remote Abruzzese towns of Musellaro, Salle, and Bolognano was already generating renown.

These *cordari*, understandably, jealously guarded their craft, yet recognized the benefit of relocating to the larger markets of first Rome, and later to Naples and other countries. Both cities were ideal centers for fabrication, where lamb or unweaned kid goats were consumed more than in other European cities, guts were not stored for export, and there were many large religious festivities with musical performances throughout the year. Strings produced in these cities by Abruzzo masters were considered pre-eminent in the eighteenth and nineteenth centuries, particularly the thin first and second strings for the violin and *chantarelles* for the guitar and mandolin.

Starting in the second half of the 1500s, the original seven Roman *cordaro* families – from Musellaro – grew to 20 *privilegiati* shops by 1735. The early production of strings soon expanded to Naples so that as early as 1653, and Sallesse *cordari* created statutes regulating their trade, similar to those passed in Rome<sup>2</sup>. There were rules regarding the acquisition of guts, the size of twisting frames, and the length and packaging of strings. Another common statute prohibited the splitting of intestines lengthwise down the middle (*corde spaccate*), which was considered commercial fraud; the 1685 Neapolitan statute penalized *cordari* who committed this act with a hefty fine.

Making the strings was a dirty, smelly, labor-intensive process, and authorities knew that it caused disease<sup>3</sup>. The noxious odors and waste from these workshops were a threat to public health, so laws often relegated them to the outskirts of cities near water where the infected waste could be disposed along with other sewer matter. Indeed, accounts from 1692 and 1776 indicate that the Neapolitan string-makers worked in a quarter situated to the right of the Fontana di Guffò (or della Coccovaja or degli Incanti), once located in Piazza del Porto (or del Mercato di Porto or dell'Olmo)<sup>4</sup>. This former plaza ran along

<sup>1</sup> P. BARBIERI, translator K. Hurry, *The Roman Gut String Makers. 1550-2005*, in «Studi Musicali», XXXV (2006), pp. 3-128, pp. 5, 12-17, 21, 24 ss; P. BARBIERI, *Roman and Neapolitan Gut Strings 1550-1950*, in «The Galpin Society Journal», LIX (May 2006), pp. 147-181, pp. 148-149, 154-155.

<sup>2</sup> *Ibidem*; PERUFFO, translated by I. Magherini, *The mystery of gut bass strings in the sixteenth and seventeenth centuries. The role of loaded-weight gut*, in «Recercare», V (1993), pp. 115-151, p. 117.

<sup>3</sup> BARBIERI, *Roman Gut String Makers*, p. 7-9.

<sup>4</sup> C. CELANO, *Delle notizie del bello, dell'antico, e del curioso della città di Napoli per I signori forastieri date dal canonico Carlo Celano napoletano, divise in dieci giornate*, IV, Napoli, Stamperia di Giacomo Raillard, 1692, pp. 164-165; N. CARLETTI, *Tipografia universale della città di Napoli*, Napoli, Stamperia Raimondiana, 1776, p. 74; Napoli, *Fontana degli Incanti o della*

today's Via Alcide de Gasperi, where close proximity to the port waters made dumping more convenient.

46. Fontana perenne del Guffo, e volgarmente Coccovaja. Fu cretta nel 1595 a' tempi del Vicerè di Toledo a comodo pubblico.  
47. Quartiere de' Costruttori delle corde di minugia, o sia di budello, ed al di là dicesi il Fondaco del cetrangolo.

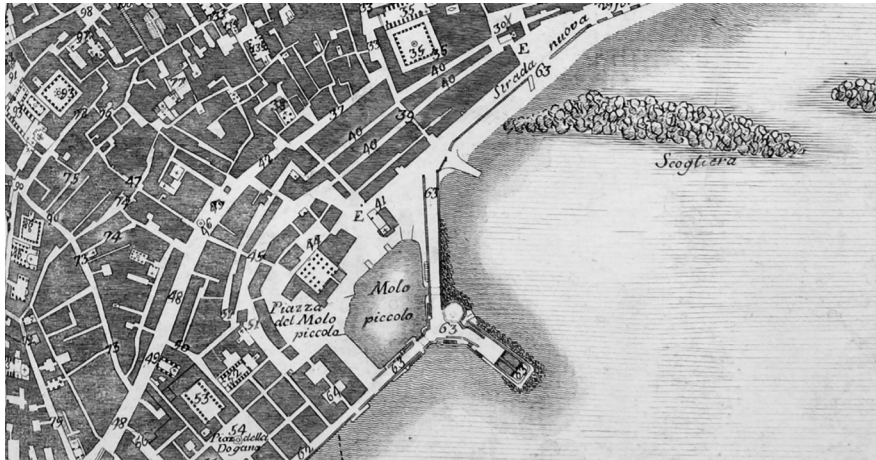


Fig. 1.1 and 1.2. G. Carafa (duca di Noia), Mappa topografica della città di Napoli e de' suoi contorni, 1775 (details). Number 47 on the map indicates the original neighborhood of the gut-string makers, near Fontana di Guffo labeled as number 46 (Napoli, Biblioteca Nazionale Vittorio Emanuele III, Sezione Manoscritti e Rari).

A decline in sheep-farming and lamb consumption, and the disappearance of some bow instruments in the mid-eighteenth century merged the 20 Roman businesses into a monopoly of only two factories, one led by Naples-based Domenico Antonio Angelucci<sup>5</sup>.

### 3. Angelucci Beginnings

The Angeluccis began producing harmonic strings early on. A Luca Angelucci (son of Cola) and his business partners in Salle had gut-string workshops in Foggia and Melfi<sup>6</sup>. In two contracts in 1678 and 1679, Luca sold as many as 120.000 lamb gut-strings for violins and guitars to Domenico Follacchi and Giovanni Batta [*sic*] Marino, both Roman workshop owners.

Coccovaja (available at <https://napoliforme.comune.napoli.it/>, last viewed 26 January 2026).

<sup>5</sup> BARBIERI, *Roman Gut String Makers*, pp. 29-32; BARBIERI, *Roman and Neapolitan Gut Strings*, pp. 148-149.

<sup>6</sup> BARBIERI, *Roman Gut String Makers*, pp. 32, 102.

By the period of Angelo I Angelucci in 1716, the family had become so wealthy that they rose to the rank of *signori* in Salle<sup>7</sup>. Indeed, when Archpriest Don Luca Angelucci died in 1753, he donated all of his riches to Salle's poor. The family was also able to lend thousands of ducats to Duke Francesco Pinelli of Tocco (today appended with da Casauria, near Sulmona) and to Salle's own Baron Matteo Genua.

Domenico Antonio Angelucci, born around 1711 to Martino of Salle, was likely a descendant of the Luca Angelucci string-maker<sup>8</sup>. He appeared as the head of household in the 1746 *Catasto Onciario* for Salle, already leading a flourishing string-making business in Naples along with two of his three brothers.

The image shows a handwritten page from a tax register. At the top right, the number '105' is written. The main heading reads 'Domenico Ant. Angelucci Negoziante di corde di budelle. anni 35'. Below this, several entries are listed with corresponding numbers on the right side:

Donato Felice. M <sup>o</sup> . d'anni	32
Donato Felice. M <sup>o</sup> . d'anni	24
P. Nicola. M <sup>o</sup> . sacerdote d'anni	27
V. Girolama Angelucci. M <sup>o</sup> . d'anni	75
Tassa due	
Industria di Dom. Ant. Onc.	14
Industria di Felice Onc.	14
Industria di Donato Onc.	14

At the bottom, there is a note: 'Abita nella Città di Napoli, Unitam. con l. Don. Felice, e Donato. dove tengono Bottega e Negozio di corde.'

Fig 2. The first page of the *Catasto onciario* for Domenico Antonio Angelucci lists members of his Salle household, their occupations, ages, and residence (1746), ASDNa, *Sommaria, Catasti Onciari, Salle*, vol. 3282, pp. 67-71. By permission of the Ministry of Culture.

At age 35 years old, Domenico Antonio was listed as *negoziante di corde di budelle*. He and his brothers and business partners 32-year-old Felice and 24-year-old Donato were each charged 14 once in head taxes. The stringmakers lived in Naples, where they had a workshop and store. In Salle, Domenico Antonio possessed «a palazzata house with many rooms» where their 27-year-old priest brother, Nicola, and their 75-year-old mother, Girolama, lived. The brothers stayed in this untaxed home when they returned to Salle from Naples.

<sup>7</sup> G. DE FINO - S. DI LUZIO - R. MORANTE, *Sallis Castrum. Vecchia e nuova vita del borgo natio*, Roma 1993, pp. 111-112; BARBIERI, *Roman Gut String Makers*, p. 32.

<sup>8</sup> ASDNa, *Sacra Patrimonia*, I Pandetta, 1763, 89/1522; «Angelucci Francesco Severio», marriage transcription for Angelucci Domenico Antonio e Genoveffa Giannini; ASDNa, *Sommaria, Catasti Onciari, Salle*, 1746, vol. 3282, pp. 67-71, «Angelucci Domenico Antonio», transcribed by Prof. M. Martini and the author.

Domenico Antonio possessed extensive property in Salle – 28 pieces of land, three vineyards, two small gardens, another small home, three *case rustiche* for people or animals, three house sites, one sheep, three goats, and many horses. The properties produced grain for selling and consumption, and many bordered properties owned by the D'Addario, D'Orazio, and Ruffini families who later became prominent stringmakers themselves. In total, Domenico Antonio's holdings in Salle amounted to 141 once and 0,9 grana in tax value. After deductions, Domenico Antonio's household was expected to pay 114 once and 4¼ grana in taxes that year.

The *Onciario*, however, was silent on the family that Domenico Antonio had created for himself. He had married wife Genoveffa Giannino in 1734 and raised at least two daughters Grazia Elisabetta (circa 1738-1825) and Rosa (circa 1747-1827) and two sons Martino Angelo and Francesco Saverio (1744-1818) in Naples<sup>9</sup>. Eldest son Martino Angelo would follow his father to become a famous *cordaro* and bring their family later posterity.

On 25 February 1742, Martino Angelo Giuseppe Mariano Rosario Roberto Angelucci was baptized at Chiesa S. Giorgio Maggiore by Don Domenico de Pietro. Signore Don Domenico Gaudiello served as his godfather; he was the gate-keeper for Piazza del Popolo when the famished population fought for food during the 1764 Carnevale festivities<sup>10</sup>.

As his children grew, Domenico Antonio sought to expand his business to Rome. In 1752, his Neapolitan workshop joined up with five prominent Roman workshops<sup>11</sup>. The newly merged company was called Pica, Angelucci, Tofani and Campagni after several of the owners and was expected to last 18 years. Soon, however, a lawsuit was brought up regarding Angelucci's management in the Pica company. In July 1758, the *Supremo Magistrato del Commercio* in Naples forced Angelucci to lose 3,000 scudi worth of strings that he had sent to Rome for his membership fee, thus relinquishing his position in the company. (His son Martino Angelo later reported that brother Felice Angelucci wrote several essays about their craft during this years'-long dispute, but the judicial outcome and this manuscript have not been found.) The company continued to have a branch in Naples but was led by a Roman master. When Domenico Antonio died in January 1765, he was still considered «le plus célèbre cordaro de Naples».

<sup>9</sup> ASDNa, *Sacra Patrimonia*, «Angelucci Francesco Severio», marriage and baptismal transcriptions; ASNa, Vicaria, *Atti di morti*, Angelucci Grazia Elisabetta, Rosa, and Francesco Saverio (<https://antenati.cultura.gov.it>).

<sup>10</sup> ASDNa, *S. Annunziata a Fonseca, Processetti matrimoniali*, 1768, fasc. 20, n. 2309, «Don Martino Angelo Angelucci and Donna Maria Teresa Pepe», baptismal transcription for Angelucci Martino Angelo; L. BARLETTA, *Il Carnevale del 1764 a Napoli, proteste e integrazione in uno spazio urbano*, Napoli, Società editrice napoletana, 1981, pp. 38, 48.

<sup>11</sup> BARBIERI, *Roman Gut String Makers*, pp. 30-32, 109-111; BARBIERI, *Roman and Neapolitan Gut Strings*, pp. 148-149; J. LALANDE, *Voyage d'un François en Italie, fait dans les années 1765 & 1766*, VI, Venice, Desaint, 1769, pp. 271-276.

#### 4. Martino Angelo Angelucci

Meanwhile, Martino Angelo enrolled in the doctoral college at the University of Naples in October 1757 and continued his studies for the next five years<sup>12</sup>. He received his law degree on 10 March 1762, and his brother Francesco did so in theology two years later, following the usual path of younger sons into the priesthood.

Martino Angelo joined his father's harmonic strings business soon after graduation and probably took over after Domenico Antonio's death, making his family business famous and earning the reputation of renowned master *cordaro* in eighteenth-century Italy.

«Angelo Angelucci occupies the first rank among the forgotten practitioners who devoted their intelligence to perfecting the *chanterelles*» wrote musicologist and critic Émile-Mathieu De Monter more than 75 years later<sup>13</sup>. (The *cordaro* was often referred to as simply «Angelo».) Martino Angelo conducted numerous experiments on the force of tension and resistance, on the degree of sonority, and on the hygrometry of the intestines of various animals near the Fontana dei Serpi. This area closer to the Duomo in the Pendino neighborhood became the new Vico Cordari<sup>14</sup>. (The Fountain of the Snakes was once located near today's Vico Canalone a Fontana dei Serpi, right around the corner from Martino Angelo's baptismal church.)

Always eager to improve his product, Martino Angelo traveled to the artistic centers of Italy to see the immediate advantages of his strings and receive advice from *virtuosi*<sup>15</sup>. Martino Angelo visited Rome around the time of Easter to hear “brilliant” music in the Sistine Chapel provided by the stringed instruments of excellent construction, obtained useful feedback from chapel-master and composer Father Giambattista Martini in Bologna, and received public accolades from the famous violinist and composer Giuseppe Tartini in Padova, who lamented the defective strings made prior to Angelucci. Hearing the orchestra of the Basilica di Sant'Antonio, «Angelucci was convinced of the sincerity of the sympathies of that illustrious choirmaster» De Monter wrote. Martino Angelo also visited the musical schools of Ferrara, Venice, Florence, and Ancona. «Welcomed everywhere with eagerness, surrounded with the respect that artists in all eras show to those who facilitate their path to success, the *cordaro* returned to Naples and devoted himself solely to this industry, which made him more popular every day».

<sup>12</sup> ASNa, *Collegio dei dottori*, contenitore 90, fol. 24r, Angelucci Martino Angelo; ASNa, *Collegio dei dottori*, contenitore 160, fol. 34v, Martino Angelo Angelucci; ASNa, *Collegio dei dottori*, contenitore 92, Francesco Saverio Angelucci.

<sup>13</sup> LALANDE, *Voyage d'un François en Italie*, p. 271; P., *Appendice. Angelo Angelucci*, in «Gazzetta Musicale di Milano», XVI (28 Nov. 1858), n. 48, pp. 379-381; E. DE MONTER, *Angelo Angelucci, Le Cordare*, in «Revue et Gazzette Musicale de Paris», XXV (7 Nov. 1858), n. 45, pp. 366-368.

<sup>14</sup> L. RUSSO, email 4 September 2023 to author; F. GAMMELLA, *Il muto per Napoli, ossia, Le mille quattrocento strade, vichi ecc. reperibili da tutti, con designazione dei quartieri rispettivi*, Napoli, presso Francesco Gammella, 1834, p. 76; CELANO, *Notitia del bello*, III, 1692, p. 283.

<sup>15</sup> LALANDE, *Voyage d'un François en Italie*; DE MONTER, *Angelo Angelucci*; P., *Appendice. Angelo Angelucci*.

### 5. Gut-String Fabrication

Jealous of Italian string-makers, French astronomer Joseph Jérôme Le Français de Lalande spent time with Martino Angelo in Naples between 1765 and 1766. He went on to publish information about Angelucci's *cordaro* business in his 1769 multi-volume travelogue. Later, German doctor J.J. Volkmann visited with Martino Angelo and published in Leipzig his own 1777 book, *News from Italy* (*Historisch-kritische Nachrichten von Italien*), in which he recounted the detailed manufacturing processes and work of Angelucci.

There are few surviving descriptions of early gut-string fabrication, so Martino Angelo's accounts elucidated the highly secretive process of the harmonic gut-string craft. These procedural details were so valuable that they were translated and republished for years, passed down from *cordaro* father to son, from country to country, and are still treasured by music historians and craftsmen today<sup>16</sup>. These and other cited sources provide the basis for the gut-string fabrication process and business, particularly for Martino Angelo, described here.

The intestines of sheep have been used to make the strings for violins, violas, violincellos, mandolins, guitars, and lutes since the Middle Ages but largely stopped in the 1950s before restarting in the 2000s<sup>17</sup>. Whether plain, loaded or roped, or wound gut was used depended on the time period, string note (or number), and instrument, according to gut-string scholar and musician Daniela Gaidano.

In the past, strings for the bass, low notes were composed of three to five strands of the intestines of sheep over 3 years of age or goat<sup>18</sup>. For the tenor or middle range of sound, strings of two strands were made from castrated sheep or those older than 3 years.

The strings for high notes (*chanterelles*, *corde sottili*, first string for violin or note E) are the thinnest and subjected to the most tension; they must combine maximum thinness with maximum mechanical resistance. These violin strings were made up of two to four strands of the intestines of lambs who were weaned but under 1 year old (had been shorn twice) or sometimes castrated sheep. Beginning in the mid-eighteenth century, the Roman market survived only by producing the first and second strings of the violin.

Martino Angelo explained that for *chantarelles*, the guts from lambs slaughtered in the months of August and September, when they were 7 or 8 months old, produced much higher-quality strings. He discovered that lambs of that age who were grass-fed in the mountains instead of on the plains had intestines that in the summer «stretch out better, are smoother, drier, and more sonorous»<sup>19</sup>.

<sup>16</sup> *Ibidem*; N.G. DURINI, *Delle Corde di Minugie*, in «Annali Civili del Regno Delle Due Sicilie» IX (Sept.-Dec. 1835), pp. 5-9; MUSIQUE POPULAIRE, *Le corde di violino*, in «Gazzetta Musicale di Milano», XXXVIII (19 Aug. 1883), n. 33, p. 307.

<sup>17</sup> BARBIERI, *Roman Neapolitan Gut Strings*, p. 148; D. GAIDANO, *Tables on Evolution of Strings in the Violin Family*, danielagaidano.com.

<sup>18</sup> *Ibid.*; BARBIERI, *Roman Neapolitan Gut Strings*, pp. 149-150; BARBIERI, *Roman Gut String Makers*, pp. 4-5, 30.

<sup>19</sup> MUSIQUE POPULAIRE, *Le corde di violino*.

String fabrication was a process that involved several people and many steps<sup>20</sup>. First, *mazziere* collected the guts from a butcher (*raccogliatura*). Angelucci employed four men who would go twice daily to the four corners of Naples in search of goatkeepers and butchers who would sell goats and lambs. The *mazziere* would pay 5 grana for each, but the intestines often broke, so much of the supply was lost. Next the *mazziere* and every man available helped with washing the intestines of their smelly contents (*politura*).

Out of three membranes in the small intestine, only one very thin strong membrane that accounted for about 5% of the total volume was used to make strings. Thus, the *lavorante* assisted by the *strisciattore* eliminated the two thicker membranes through stripping and tanning processes (*scarnitura* and *concia*). These steps included fermentation and mechanical abrasion (using a cane scrapper on the intestine on a wooden table).

Next was further decomposition (*strisciatura con detale*), or soaking the intestines in various alkaline solutions made up of water, potash, vinegar, wine lees. The exact composition of this mixture remained a closely guarded secret among the Neapolitan string makers for a long time. This process could last eight days, 10-12 guts in each bowl (*scodella*). The decomposed parts were removed three or four times daily using a type of finger thimble and passing the intestines from one bowl to the next.

The *capatore* then sorted the guts for thinness, with the thinnest used only for harmonic chantarelles and thicker ones for other strings. Martino Angelo's workers separated guts in lengths of 50 *pieds* into nine different types, based on their quality, thickness, and strength for different types of strings and then cut off the thickest parts. He explained that two strands were used to make the smaller strings for the mandolin, three for the first violin string, seven for the last violin string, to as many as 120 casings for the thickest strings of the double bass, and sometimes up to 300 casings for use by hatmakers or cotton manufacturers. Modern gut-string maker Mimmo Peruffo estimates that Angelucci's E strings measured approximately 0,7 mm or thicker in diameter.

Then the *torcitore* wrapped the guts on a wooden frame and alternately twisted them (*rota* and *ribattitura*) while sulphuric vapors from a nearby stove permeated the strings (*stufò con zolfo*). Martino Angelo said they turned their crank wheel, twisting the intestines ten times, but this could differ depending on the fabricator or string type. The *strisciattore* used potash-soaked horsehair ropes, abrasive grass, or pumice stone to rub or polish the strings.

Finally, the dried strings were oiled, cut, and wrapped or rolled into hanks (*bagno di olio*, *tagliatura*, *incannellatura*). Martino Angelo cut them into lengths of six to eight *palmi* and folded them into boxed packages with specific names; for example, a cylindrical coil was called a *favetta*. The folded

<sup>20</sup> BARBIERI, *Roman Neapolitan Gut Strings*, pp. 149 ss; BARBIERI, *Roman Gut String Makers*, pp. 4-11; AQUILA CORDE ARMONICHE, *The historical Italian way to make gut strings. Demo*, YouTube video, (<https://www.youtube.com/watch?v=630xalYuGsl>, last viewed 26 January 2026); PERUFFO, *The Rediscovered Method of Making Strings From Whole Unsplit Lamb Gut* (available at <https://aquilacorde.com>, last viewed 26 January 2026); PERUFFO, *Italian violin strings in the eighteenth and nineteenth centuries. Typologies, manufacturing techniques and principals of stringing*, in «Recercare», IX (1997), pp. 155-203, updated version translation help by T. Stone and H. Ward-Perkins (available at <https://ricerche.aquilacorde.com>, last viewed 26 January 2026).

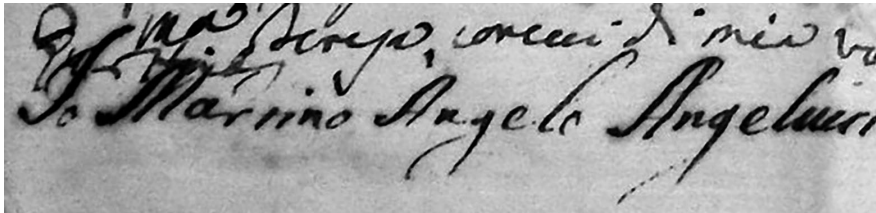
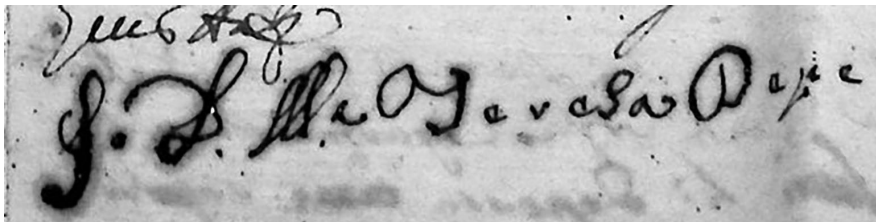
or coiled strings were sold directly from Angelucci's shop or to lute-makers. Thicker strings could cost up to 50% less than the thin ones.

The *mastro*, such as Martino Angelo or Domenico Antonio, managed the whole operation. Martino Angelo reported having more than 100 workers throughout the Kingdom of Naples, paying them 21 lira and 8 soldi per month. In Naples, the working season for *cordari* spanned from Easter through October, longer than in Rome. The best time for making first violin strings was between June until early October, while sources from the nineteenth century explained that Neapolitans spent winters making other kinds of string that were less strong, including second violin strings.

### 6. Martino Angelo's Family Life

Martino Angelo's personal life expanded when he started his own family as he reached his later 20s. At that point, he belonged to Chiesa Sant'Angelo a Segno on Via dei Tribunali, had earned the title of Signore Don, and arranged to wed the daughter of Signore Don Francesco Pepe and Donna Angela d'Amato<sup>21</sup>. Maria Teresa Antonia Gaetana Giuseppa Pepe had been baptized in March 1747 at Chiesa della S. Annunziata a Fonseca in today's Stella quarter.

Martino Angelo and Theresa had lost their fathers by this time, so witnesses Dons Nicola and Gaetano Buonocore, Don Nicolessa da Campora, and the bride's mother attested that neither had had previous relations and had always remained chaste. Others attested that Martino Angelo had never been a soldier. Both parties declared that they were single, wanted to marry each other voluntarily, were not related, and had no impediments, their signatures indicating their high levels of education.

Figg. 3.1 and 3.2. The signatures of Martino Angelo Angelucci and Maria Teresa Pepe on their marriage documents. ASDNa, Chiesa della S. Annunziata a Fonseca, *Processetti matrimoniali*, fasc. 20, n. 2309.

<sup>21</sup> ASDNa, Chiesa della S. Annunziata a Fonseca, *Processetti matrimoniali*.

The bans were announced or posted three times in the churches. Martino Angelo Angelucci married Maria Teresa Pepe at her parish on 20 June 1768, just months after King Ferdinand IV married Maria Carolina of Austria.

Immediately in 1769, the young couple welcomed daughter Maria Irene Angelucci. She would be their only surviving child, raised in the rich setting of Naples among her father's crafty genius and musical celebrities of the day.

Biographical information printed later shed light on Martino Angelo as a man at the center of Enlightenment Naples, who mingled with intellectuals and musicians around the country and whose hard work brought him admiration and prosperity<sup>22</sup>. Martino Angelo must have also had a generous and friendly character. Later commentators wrote:

It was not long before his house at the Fontana dei Serpenti became the meeting point for artists who passed through Naples. Sure to find smiling hospitality, useful conversations and sometimes even profitable advice; happy to meet pleasant relationships and visit the laboratories of Angelucci, all men of emerging or already established fame went there, as if to a traveling academy of art and melody, to discuss new works and recent triumphs.

Angelucci welcomed to his home Tartini's best scholars, including Venetian singer and violinist Maddalena Lombardini Sirmen; German composer and conductor Johann Gottlieb Naumann, who begged that Angelucci explain his acoustic discoveries; and shopkeepers and travelers, including the above-mentioned Lalande and Dr. Volkmann. Amidst these intellectuals, musicians, and her wealthy father, Irene was educated and grew up to become an astute young woman.

### 7. *Decline of Cordari Angelucci*

De Monter summarized Martino Angelo's existence, «His life was obscure, laborious, full of disappointments overcome, and of fruitless attempts—the life of all those honest and loyal servants of harmony who, in the eighteenth century, deserved, through their devoted efforts, the friendship of composers and performers».

Records from the *Cappellano Maggiore* show that the Vicario Capitolare had some sort of dispute with Martino Angelo in 1775, and one trial was detailed in an 1819 edition of the *Gazette musicale de Speyer*, but no details have been found.

In the end, Martino Angelo tragically disappeared from public memory, and De Monter wrote sadly:

Angelo suffered the unfortunate and fatal fate of almost all inventors; he formed a large company for manufacturing the strings, and his partners stripped from him the rewarding fruit of 20 years of research and study.

<sup>22</sup> P., *Appendice. Angelo Angelucci*; DE MONTER, *Angelo Angelucci*.

A lawsuit ensued that ultimately ruined the poor *cordaro*, who died abandoned and destitute...[T]here is no document to date relating to the death of this musical engineer, who played such a significant role.

De Monter's word may not be entirely accurate. While Martino Angelo's death date is not exactly known, the young German musicians Franz Seydelmann and Joseph Schuster were mentored by Martino Angelo when they visited him the year of his death. Both students would later become the chapel masters of the Elector of Saxony. Whatever occurred, Martino Angelo's daughter Irene used her family wealth to achieve the status of duchess while maintaining her father's *cordaro* business.

### 8. Irene Angelucci

Between 1792 and 1793, Neapolitan notary Tommaso Salomone drew up terms of marriage between Irene Angelucci and Don Gabriele de Martino, Duke of Faicchio, a town at the foot of the Matese mountains between Piedimonte Matese and Cerreto Sannita<sup>23</sup>. Gabriele was the eldest son of Don Giuseppe Maria De Martino and Donna Maria Vincenza Danza, daughter of the Marquis Carlo Danza, once president of the *Sacro Regio Consiglio*.

Irene married Gabriele probably in Naples in December 1793. The total dowry promised to the Duke of Faicchio was 40.000 ducats, of which more than half was delivered in various credit lines and other parts in successive installments. Salomone's documents cannot be located, but two notarial documents written soon after their marriage indicate that Irene's substantial dowry was in cash and real estate, including debts to be repaid. A Luca Angelucci and uncle Francesco Saverio Angelucci also gifted to Irene extensive property in Salle and Tocco (much of it similar in description to her grandfather Domenico Antonio's holdings in 1746), but these assets were extradotal.

Notary Francesco Antonio Letizia wrote a deed in January 1794 in the Naples home of Don Ludovico Messina, Piazza dell'Arena della Sanità, in Vicolo San Felice, where the newlyweds resided. The document described the sale of the Salle and Tocco lands that had been given to Irene, as she thought the property was too far from where she would be living. She sold them for the total sum of 1.902 ducats to the Magnificent Francesco di Bartolomeo from Salle, who was passing through Naples. The same transaction, with more details, was drawn up in Salle later in January by the notary Pangrazio Napoleone.

Several surviving documents describe the couple's close ties with royalty as well as the nature of their relationship. Irene bore at least two children soon after her marriage to the Duke. Towards the end of her pregnancy in May 1795, King Ferdinand granted the Duke of Faicchio and his family the grace

<sup>23</sup> Archivio di Stato di Chieti, *Atti dei notai*, No. 6: Napoleone Pangrazio, collocazione XLIX / 4, 1794, transcribed by L. Russo; ASNa, *Archivi dei notai del XIX secolo*, Archivio del notaio Letizia Francesco Antonio, fondo 442, vol. 16, 1794, transcribed by L. Russo; U. D'ANDREA, *L'Antico abitato di Salle dai tempi aragonesi al terremoto della Marsica (1443-1915)*, I, Frosinone, Tipografia Abazia di Casamari, 1983, p. 106.

of using his private oratory<sup>24</sup>. Martino Angelo Angelucci's daughter, now the Duchess of Faicchio, had arrived at the inner sanctum of the sovereign king! Just days later, Irene gave birth to a daughter, Maria Vincenza Antonia Rachele Giovanna Raffaella De Martino<sup>25</sup>.

The newborn was delivered by midwife Paola Fuzaro where the family lived at Palazzo di Luzzaro in Naples, but the location of this building is unknown today. Vincenza was baptized on 17 May 1795 at S. Maria Assunta. Around this time, Irene also gave birth to Giuseppe De Martino, who was expected to later inherit the duchy of Faicchio<sup>26</sup>.

Sadly, relations between the Duke and Duchess of Faicchio became strained. Within seven months after Vincenza's birth, Gabriele arranged for the King to pressure the ecclesiastical ministry's *Segreteria di Grazia e Giustizia* to order that the Duchess be confined to the nunnery of the Solitaria<sup>27</sup>. In March 1796, the Duke said that he ordered his wife to stay there due to disagreements between them. He asked that priest Francesco Saverio Angelucci be forbidden from visiting his niece, since Gabriele felt that the discord between the couple was being fomented by Irene's uncle. Irene was forced to stay in the convent for several months at least, if not years.

Yet Irene would show her ability to persevere, not allowing her subordinate position as a wife and mother to keep her down. She used her wealth and status to hold men accountable and maintain her independence. By January 1802, Irene was living on her own in the Montecalvario neighborhood<sup>28</sup>. She agreed to pay 110 ducats in three installments annually to a Signore Pietro Maria Mirengi to rent the apartment number 5 at Vico Chianche alla Carità (today's Via Giuseppe Simonelli). This area was known for meat displayed prominently in butcher stalls, where it was probably easier for Irene to keep an eye on her inherited *cordaro* business. «This rent includes a room in the middle of the stairs for pantry use, and Mr. Pietro is required to make the necessary accommodations and maintenance according to the customs of Naples». The apartment had «slabs in the two balconies, a window facing the street, and in the other rooms the windows to be delivered to me with all the hardware and then return them to him as they were delivered to me».

It was not long, however, before a landlord-tenant dispute arose: Irene withheld her rent because the requested repairs had not been made to the property. In October 1803, a judge ordered the Duchess to release within four days her temporary deposit of 36.95 ducati—a third of her rent—due the month prior and compelled Mirengi to make the repairs. But when Mirengi requested the payment from Irene, he also requested her eviction on the grounds that she had sublet a room. The Duchess would not leave quietly and

<sup>24</sup> ASNa, *Segreteria di Stato degli affari ecclesiastici, Registri dei dispacci*, vol. 522, p. 268r, translated by I. Palombo, Angel Research.

<sup>25</sup> ASDNa, *S. Maria Assunta (Duomo), Battesimi*, vol. 14, 1790-1809, p. 85, 17 May 1795, De Martini.

<sup>26</sup> Archivio di Stato di Caserta, *Aversa, Atti di morti*, 1843, n. 320, Il Duca di Faicchio Don Giuseppe de Martino (<https://antenati.cultura.gov.it>).

<sup>27</sup> ASNa, *Segreteria di Stato degli affari ecclesiastici, Registri dei dispacci*, vol. 525, p. 198, translated by I. Palombo; *ivi*, vol. 526, p. 189.

<sup>28</sup> ASNa, *Processi antichi: Gran Corte della Vicaria, Ordinamento Di Nocera Iovino*, b. 74, ff. 789, p. 3656, translated by I. Palombo.

instead secured an attorney to take her landlord to court. She attested that the apartment required «various adjustments: insulation of the terrace, adjustment of the window frames and balconies, arrangement of some doors, addition of the missing slabs, renovation of the fireplace». Her attorney said that the landlord did not fulfill the requested accommodations, or completed only some of them and poorly, so he «requested that an engineer or at least the scribe of court case be sent to examine the necessary accommodations that have not been made and to force the landlord to carry them out». Alternately he asked if Irene could arrange to have the work completed and charge the repair expenses to Mirengi. If or how the rental situation resolved is unknown.

The Duchess continued to manage the gut-string business once run by her father. She lent 44 ducati and 39 grana in silver coins to Francesco di Maio, a goat butcher, in September 1802 for the purchase of wooly animals whose gut would be used to make *le corde*<sup>29</sup>. She and the Duke of Lusciano, superintendent of the string factory belonging to Irene, lent another 50 ducati in silver coins to di Maio in April 1803. The ramifications from these transactions continued for years.

The Duchess had moved to a palazzo at number 144 on Infrascata (today Via Salvator Rosa) in Avvocata by fall 1810 when she took di Maio to court for not paying back the debts. He responded that he had given the animal parts to the string factory, otherwise he would not have been lent the second sum. In response, Irene

observes that the writing found behind one of the two receipts, i.e. «almost useless papers», was placed because the credit was rightly believed to be uncollectible, as di Maio had been a fugitive [or made himself unavailable by constantly changing house] for a long time or was serving as a soldier. Those receipts cannot in any way signify the satisfaction of the debt, otherwise they would have had to be with the debtor or carry the return receipt on the back. Di Maio claims to have satisfied the debt, but does not provide any unequivocal proof, his assertions are not supported by any documents.

In October 1810, the court agreed:

Considering that the debtor has not presented documents certifying the repayment of the debt and that the writing on one of the receipts does not demonstrate satisfaction of the sum owed. Considering that a creditor can very well lend two sums to a debtor with two different receipts without the first being deemed to be extinguished by the second.

<sup>29</sup> ASNa, *Processi antichi: Pandetta Nuovissima*, b. 2040, ff. 54476, Riconoscimento di due polizze bancali 1810, Attore: Duchessa di Faicchio, di Maio Francesco.

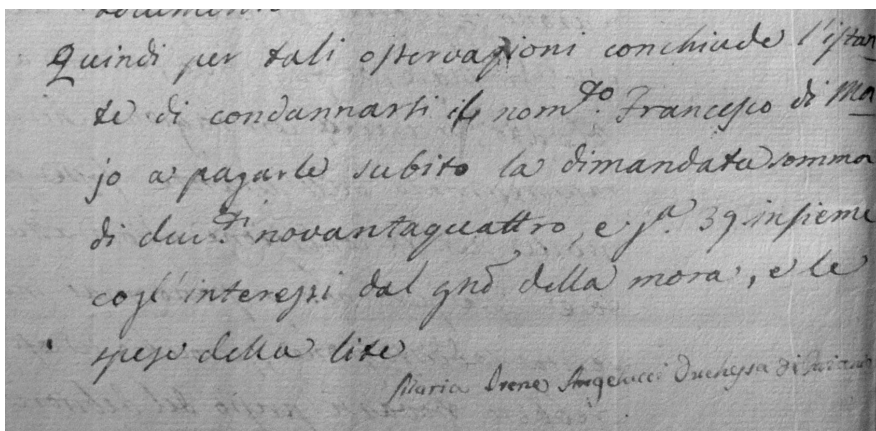


Fig 4. An 1810 decision required di Maio to repay Irene Angelucci, duchess of Faicchio. Her signature is visible on the lower right of this record, ASNa, *Processi antichi: Pandetta Nuovissima*, b. 2040, ff. 54476. By permission of the Ministry of Culture.

Benedetto Breglia wrote «We Justice of the Peace of the Pendino district condemn Francesco di Maio to pay within 8 days to Mrs. Irene Angelucci 94 ducati and 39 grana as in the said two receipts, and we condemn him to pay the interest at 8% and the legal costs of 20 carlini». Di Maio appealed the judgment, and the Court of First Instance appeared to reject his appeal in January 1811. Again, the resolution is unclear, except that even in 1842, the Duchess's daughter Donna Vincenza De Martino and her husband Don Carlo Rinaldi, Count of Nardi, were still paying debts of many ducati in silver coins and Faicchio properties to the children and a daughter-in-law of a Francesco de Maio<sup>30</sup>.

Irene and her husband Gabriele seemingly reconciled by 1813, as their son Giuseppe was living with them at Strada Avvocata 15 when his bans were announced<sup>31</sup>. She outlived her uncle, the priest Francesco Saverio Angelucci, who passed in 1818, but sadly preceded her aunts Grazia and Rosa, the Duke, and her children in death<sup>32</sup>. She retired to Faicchio, probably residing with her mother-in-law Vincenza Danza. Irene died at the young age of 54 years in 1823, months after Vincenza passed away in her 80s.

Son Giuseppe De Martino never married or had children, passing away in the Aversa mental hospital in 1843<sup>33</sup>. The son of one of Giuseppe's nephews was still arranging to pay his hospital debt years later. Duke Gabriele's death

<sup>30</sup> Archivio di Stato di Benevento, *Faicchio, Atti del notaio Palmieri Giovannantonio*, 1842, n. 65, pp. 152-156.

<sup>31</sup> ASNa, *Montecalvario, Matrimoni, pubblicazioni*, 1813, n. 75, Signore Giuseppe De Martino e Signora Ippolita Maria Sanniti (<https://antenati.cultura.gov.it>).

<sup>32</sup> See footnote 9; Archivio di Stato di Benevento, *Faicchio, Atti di morti*, 1823, n. 131, Donna Maria Irene Angelucci; *ivi*, n. 18, Donna Maria Vincenza Danza (<https://antenati.cultura.gov.it>).

<sup>33</sup> See footnote 26; Nardi private collection, G. RINALDI-NARDI, 1903-1906 letter to uncle Pasquale Sanniti, Baron of Baia and Latina; ASNa, *Pendino, Atti di morti*, 1846, n. 752, Duca di Faicchio Don Gabriele di Martino (<https://antenati.cultura.gov.it>).

record three years later indicated that only daughter Vincenza survived, so the De Martino family lost their duchy title and eventually their possessions.

Even though Martino Angelo's string-business ended and his branch of the Angelucci family seemed to disappear, numerous descendants actually exist. Irene never met her four Rinaldi (later changed to Nardi) grandchildren, who settled in Faicchio or Naples and went on to have many children of their own. Martino Angelo would have probably been proud to learn that his second great-grandson, Luigi Vincoli Nardi, became a violinist and music teacher who traveled around the Campania region during the second half of the 1800s.



Fig 5. Luigi Vincoli Nardi, descendant of Martino Angelo Angelucci, pictured with his violin circa 1907-1920.

Most of the Nardi descendants emigrated to Connecticut, New York, or New Jersey after 1880, but among those who remained, one is still a young guitar and piano teacher in Alife. Two of Luigi's sons played stringed instruments in Connecticut, and his second great-granddaughter, this author, plays the violin at an intermediate level today.

Tab 1. Direct descendance from Domenico Antonio Angelucci to this author (+ means *married to*).

1. Domenico Antonio Angelucci (1711-Jan. 1765)  
+Genoveffa Giannino (-by Jun. 1818)
- .. 2. Martino Angelo Angelucci (25 Feb. 1742- between 1776-1793)  
.. +Maria Teresa Pepe (13 Mar. 1747-by 1823)
- .... 3. Maria Irene Angelucci, Duchess of Faicchio (1769-15 Nov. 1823)  
.... +Gabriele De Martino, Duke of Faicchio (1768-29 Nov. 1846)
- ..... 4. Maria Vincenza De Martino, Countess (15 May 1795-4 Nov. 1857)  
..... +Carlo Rinaldi, Count of Nardi (1800-14 May 1859)
- ..... 5. Marianna Nardi (10 May 1823-7 Dec. 1901)  
..... +Giovanni? Mongillo (1818-1899)
- ..... 6. Luigi Vincoli Nardi (27 Jul 1845-12 Nov. 1920)  
..... +Angela Vitelli (27 May 1864-1 Aug. 1905)
- ..... 7. Carlo Nardi (18 Apr 1888-29 Nov. 1975)  
..... +Marianna Meccariello (27 Oct. 1900-30 Sept. 1975)
- ..... 8. Louis Nardi (21 Apr. 1925-11 Mar. 2017)  
..... +Judith Miramontes (25 Apr. 1926-13 Oct. 2024)
- ..... 9. David Nardi (1952-)  
..... +Janice (1953-)
- ..... 10. Shayna Nardi (1981-)

### 8. *Martino Angelo's Legacy*

In 1858, music critic De Monter explained how he met with his professor a few days before his death in Strasbourg, Austria<sup>34</sup>. This elderly man was Conrad Mathias Berg (1785-1852), an Alsace-born composer who started with violin but preferred the piano and began teaching in Strasbourg after 1806. De Monter wrote:

Lying in his large German armchair, near his piano, our old master asked us to play him one more of his beloved pieces, the one that most reminded him of the past, a melancholy and sweet fragment from Naumann's *Davidde in Terebinto*. A yellowed piece of paper slipped from the pages of the score, beneath which we could feel a violin string wound. We unfolded it, an almost faded seal revealed these words: *Angelo Angelucci cordaro. Napoli*. Mr. Berg told us in his quavering, broken voice about the peaceful existence of the Neapolitan craftsman.

Professor Berg had received the string from the former editor of the «*Gazette Musicale de Speyer*». Violinist and composer Pierre Lahoussaye, who conducted the orchestra of Paris's Théâtre de Monsieur in the 1790s, preserved

<sup>34</sup> DE MONTER, *Angelo Angelucci*; P., *Appendice. Angelo Angelucci*; T. PARMENTIER, *Historie Musicale: Berg*, in «Le Nouvelliste. Journal de Paris» (14 January 1853), p. 1; A. DIPPER, email 19 January 2026 to author; DIPPER, «Art and its means», 2012, unpublished article.

the precious Angelucci strings gifted by his teacher Pagin, only parting with them when he became deaf in 1813.

Nearly a century later, the Italian and French music communities still marveled and extolled Angelucci's harmonic cords in publications like the *Gazzetta musicale di Milano* and *Revue et Gazette Musicale de Paris*. De Monter credited Martino Angelo's «courageous perseverance ... to create this lucrative industry» that other violin string manufacturers in Italy, France, and Germany could still not achieve during his time.

They did not break, Angelucci's strings! They brought joy to all the virtuosos of his time; they were even sung in that Italian dialect that lends itself wonderfully to all kinds of flattery. «Vibrant and sonorous» wrote the *cordaro's* courtiers, «they sigh rapturously for the themes of the old masters; without yielding, without relaxing, without modifying their sound, they crush the soul under Tartini's bow»...Poetry about strings! But also, what strings, strings that... did not break, and on each of which one could have played the devil's trill two hundred times in a row!

Martino Angelo's hard work led to his proprietary advantage and gut strings that were esteemed almost 100 years later even outside of Italy. He was respected as one «who played such an important and useful role in the artistic history of the last century» and as «[t]his Neapolitan maker, whose violin strings were apparently brought to such perfection by him to have made him the most celebrated in all of Italy and abroad in that age».

De Monter added:

We, the latecomers of that overly fortunate generation, have no idea what was being played on those enchanted strings! Instrumentalist Europe swore only by Angelucci's strings! The frenzy became such that one would have had one's best friend hanged for the inheritance of three chanterelles. A packet of Neapolitan strings was a princely gift.

Even though no Angelucci strings have been yet discovered today, modern musicians and historians still admire the family's craft. «The contributions of the Angelucci family to music in the eighteenth century were very profound. Their strings rang true, and for the first time, people heard pure harmonies from larger ensembles» said Dr. Gerald Gaul, a professional violinist, violist, author, and Vice-Chairman of the National Music Museum in Vermillion, South Dakota<sup>35</sup>. He went on:

This effect was felt to be magical, and gave rise to a serious study of things like Tartini tones and the mystical meanings of key signatures. Over time, musicians and audiences developed cross-model neuroplasticity to specific harmonies. In the nineteenth century, about ten percent of the musical public could feel that G major meant the military, E major meant a woman's fickleness, and F# minor meant a spooky forest.

<sup>35</sup> G. GAUL, email to author, 13 October 2023.

## 9. Conclusion

Only two Roman monopolies, Antonio Putti (who had married a Pica heiress) and that of Andrea Ruffini, weathered the Napoleonic wars and subsequently moved to Naples by 1850<sup>36</sup>. Naples became the city that produced sought-after “true” gut-strings, particularly *chanterelles*, the four-strand version that Nicolò Paganini requested in 1829. Other manufacturers moved to France to expand. The whole industry began to decline in 1880, and remaining fabricators began following the northern European process of splitting thicker intestines lengthwise.

Gaidano explained that industrialization, wars, natural disasters, and emigration later ended the gut-string business altogether<sup>37</sup>. The ancient techniques were left behind in exchange for mass-produced strings for musical instruments, surgical equipment, and tennis rackets.

So, when new markets like tennis and sutures opened up, they jumped in: fewer gauges and more mass production, fewer products and higher volumes, thus creating a business that was easier to manage and more profitable. Thus, pursuing and perfecting a quality that was not musical but for other uses, at the beginning of the twentieth century, music was lost, excellence was lost. It was not carried forward by others; it was lost to the entire world.

She and other music historians lamented that the details of gut-string fabrication and the sonorous quality of gut *charantelles* disappeared as strings transitioned to steel or nylon.

The striking thing is that despite having achieved and maintained absolute excellence in the quality of musical strings, the people of Salle and their string makers in general remained entrepreneurs. They sold primarily through agents; only a few dealt directly with musicians – Salerni, Angelucci, and the Roman families – so few had qualitative feedback from the musicians; most only had feedback on sales volume.

Beginning in the 1970s, musical scholars and craftsmen begin looking into the lost art of gut-strings as musicians sought to revive ancient performance techniques. Study of antique harmonic strings, historic writings, and archival documents plus interviews with the few remaining stringmakers uncovered details of the craft.

In the 1990s, chemist, stringmaker, and musician Mimmo Peruffo became enthralled after hearing the marvelous sound produced by violin gut strings as compared with modern strings. Peruffo and his former business partner Gaidano looked into this process from a sociological perspective, probably the only people who tracked down and interviewed Sallesi stringmakers or

<sup>36</sup> BARBIERI, *Roman Gut String Makers*, pp. 33 ss; PERUFFO, *Italian violin strings*; PERUFFO, *Nicolò Paganini and gut strings. The history of a happy find*, in «*Recercare*», XII (2000), pp. 137-147, p. 138.

<sup>37</sup> GAIDANO, emails to author, 11 and 16 July 2025.

their descendants. Experiments began as they attempted to recreate historic gut-string fabrication at their Aquila Corde Armoniche workshop in Vicenza, a process that only a handful of luthiers have undertaken. Through years of research, interviews, and testing, Peruffo discovered that antique gut strings are more pliable and softer (elastic), longer lasting, and perform better acoustically than strings made using modern methods<sup>38</sup>. «Musicians notice that strings made from uncut sheep intestines are strong, have twice the loudness, and reach the appropriate note faster» he explained. Most Italian stringmakers today are located in the Veneto and Bologna areas, while Toro Strings is in Salle. In New York, the D'Addario company sells instruments and parts worldwide, as does La Bella strings, both owners from old Salle families. Aquila Corde Armoniche remains one of the few string-makers who still make and sell harmonic strings from sheep guts using historic processes.

The Angelucci men, originating from the Salle craft of harmonic gut-strings, were once respected master *cordari* based in Bourbon Naples. In Italy and throughout Europe, their strings were sought after by famous musicians and their processes admired by scientists. Martino Angelo epitomized the Enlightenment ideal of applying scientific method (experimentation) to improve musical performance, leaving an important mark on Neapolitan history and the harmonic music field. His daughter Irene persevered in the Neapolitan Kingdom, became a duchess, and brought forth new generations of string musicians in Italy and the United States up to today. It is time for the important and innovative contributions of the Angelucci family on harmonic gut-strings, once largely forgotten, to be remembered and admired by modern audiences, especially in Naples.

SHAYNA MUCKERHEIDE

<sup>38</sup> PERUFFO, *Rediscovered Method of Making Strings*; ID., *Italian violin strings*; ID., interview with author, 4 July 2025.



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