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DONNA AGRELL, THOMAS DRESCHER, MARTIN KIRNBAUER (EDS.)

Fagottini and Tenoroons

Small-Sized Bassoons from the 18th and 19th Centuries

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Preface

The present volume is devoted to the subject of small-sized bassoons. It combines important initiatives underlying the modern-day revival of historical musical practice, which began in the second half of the 20th century, namely the study and reconstruction of historical musical instruments, their playing techniques, and their distinctive timbres. A special feature of the topic is that it is already implicitly present in instruments of the 16th and 17th centuries and thus extends over a span of more than 350 years.

The articles in this publication are the outcome of several research projects conducted at the Schola Cantorum Basiliensis between 2017 and 2023. Two of them ("Fagottini and Tenoroons – Small Forgotten Giants" and "Out of the Bass Register – Uncovering the Organology, Pedagogy, and Performance Practice of Small-Sized Bassoons from the 18th and 19th Centuries") were supported by the Swiss National Science Foundation; a third and smaller one ("Neue alte Klangkörper") was funded by private foundations.

The authors of the following articles include members of the SCB research team (Donna Agrell, Thomas Drescher, Áurea Domínguez, Giovanni Battista Graziadio, Zoë Matthews-Visentin, Letizia Viola) and experts on various aspects of the topic (David Gasche, Klaus Hubmann, James Kopp, Vincenzo Onida, Ricardo Simian).

The interest in these special instruments began with the simple observation that a surprising number of historical bassoons of smaller formats have been preserved in museums and private collections. However, their instrumental roles and musical function are largely unclear, even though the literature has referred to these instruments and their special repertoire for some

time.[1] Initially only about 30 specimens were known;[2] through preparatory work by the Basel team it soon became apparent that considerably more were to be found. By the time the projects were completed in the spring of 2023, more than 130 specimens from the 18th and 19th centuries had been traced, quite a few of them from the hands of the best makers of their time.[3] They are divided into two types: octave instruments, so-called "fagottini" in c (conceived from an eight-foot bass in C), found mainly in the early and middle 18th century, and instruments in tenor register ("tenoroons"), a fifth (G) above the eight-foot bass, or alternatively a fourth (F) above it, which predominated in the second half of the 18th and in the 19th century; in the 19th century these appeared almost exclusively as quart bassoons.

Historical references offer a broad assortment of other terms, including "piccolo-fagotto", "bassonetto", "Tenorfagott", "Quint-/Quartfagott", and so on. It was decided at the onset of our research to use "fagottino" to refer in general to all small-sized bassoons, in addition to the octave models. "Tenoroon" refers to all those instruments pitched a fourth or fifth higher than the "full-sized" bassoon. To make matters even more complicated, when one hears the term "fagottino" today, however, it is almost always in reference to a small modern bassoon model (either a fourth or fifth higher), designed primarily for children and for pedagogical purposes in the second half of the 20th century.

1 Harry Jean Hedlund, *A study of certain representative compositions for woodwind ensembles, ca. 1695–1815*, PhD diss. Iowa: University of Iowa 1959; Lyndesay G. Langwill, *An Index of Musical Wind-instrument Makers,* Edinburgh: L. G. Langwill, 1960 (several editions); James B. Kopp, *The Bassoon,* New Haven: Yale University Press, 2012; Klaus Hubmann, "Hochgestimmte Fagotte (Tenorfagotte) in der Musik vom späten 16. bis zum späten 18. Jahrhundert", in: Christian Ahrens, Gregor Klinke (eds.), *Flöte, Oboe, Klarinette und Fagott: Holzblasinstrumente bis zum Ende des 18. Jahrhunderts,* München and Salzburg: Katzbichler 2011, 71–84.

2 Hugo Rodríguez Arteaga, *Investigating smaller bassoons from the XVIII and XIX centuries, with practical performance on a Baroque fagottino*, MA project, Royal Conservatoire The Hague, 2017; online: https://www.researchcatalogue.net/view/236269/343124 (10 October 2023).

3 A detailed documentation of all research materials and results of the projects can be found on the following websites: https://ark.dasch.swiss/ark:/72163/1/0845 (permalink) and https://www.historical-bassoon.ch/ (10 October 2023). A list of identified instruments is also available on these websites and in this volume.

What distinguishes these instruments and how were they used? To answer these questions, a multi-disciplinary approach was taken. The surviving instruments were documented and about half of them (63) were analysed *in situ* in greater detail. Selected models were documented in CT scans (Sebastian Kirsch & Niko Plath, Fürth/Bavaria) and subsequently reproduced as 3D prints (Ricardo Simian, Oslo) in two formats. Shrinkage of the wood over the centuries led to certain irregularities and an ovalisation of the bore. As a result, one version with current bore dimensions was printed and a second modified version attempted to simulate the original round construction. The results were handed over to a traditional instrument maker (Vincenzo Onida, Milan), who produced wooden replicas of individual models with corrected bores, as it is nearly impossible to duplicate bore deformation. The manual process was considerably aided by the technological one; the 3D reproductions enabled more precise and detailed insights than possible with the delicate originals. The reproductions made of synthetic materials proved to be surprisingly usable musical instruments. Compared to the wooden instruments, only minor differences in sound are noticeable, as can be heard in the recording of a cantata by F. W. Zachow, in which a pair of fagottini made of wood and plastic respectively were played by members of the Basel research team.[4]

Although the organological and material studies provided valuable insights into the construction and playing of small bassoons, the question of when such instruments were used remains partially unanswered. It is easier to draw a conclusion where there is an explicit repertoire, as is particularly the case in the early period of their appearance during the 18th century. Instrument pairs, often of octave fagottini, and later also of tenoroons, were frequently used. Despite the numerous surviving originals, it is surprising how few specifically notated parts exist for these instruments. Research into repertoire meets the limits of evidence here and must rely to some extent on speculation. On the one hand, there seems to have been an expansion around 1800, thanks to excellent virtuosos, of the playable range of "full-sized" bassoons; on the other hand, it is likely that high parts in the bassoon repertoire were taken

4 Zoë Matthews-Visentin and Letizia Viola. See: https://youtu.be/ZWfM9Peg-Ok (10 October 2023).

over by tenoroons, without this being specifically marked in the score.[5] The choice was seemingly based on musical practice, which possibly influenced certain technical aspects, in addition to tonal ones. A prominent example of this may be the slow middle movement of Beethoven's *Trio for Flute, Bassoon and Piano* (WoO 37).[6] But a repertoire that has only survived in rare examples may also play an important role: arrangements of vocal works, primarily opera arias, were incorporated into the concert programmes of outstanding players in virtuoso arrangements or sets of variations. As often in the history of instrumental repertoire, such works were not written out at all or were sketched in manuscripts, but not preserved.

These few references demonstrate what problems are faced by research into repertoire. In cases where high instruments are not explicitly called for, a careful examination of specific parts and their context may suggest the likelihood, without being able to provide clear evidence.

Also problematic are aspects of the interface between player and instrument. There is no historical information available on the construction of reeds for small bassoons, and only very few instruments have survived with their matching bocals.[7] In the crucial area of sound production and concept, we must rely on the tonal and technical judgements and decisions of today's players. It can be assumed that individual differences among bassoonists in the 18th and 19th centuries, when regional or national differences were more pronounced, were no less significant than at present.

In addition to their construction, performance, and repertoire in a historical context, small-scale instruments also have potential in modern instrumental pedagogy. The small format enables children and young people to come to grips with the instruments at a relatively early age, a practice for

5 Donna Agrell, *Repertoire for a Swedish Bassoon Virtuoso: Approaching early nineteenth-century works composed for Frans Preumayr with an original Grenser & Wiesner bassoon*, PhD, Leiden University, 2015. Open access: https://hdl.handle.net/1887/36960 (10 October 2023).

6 See a video with Letizia Viola playing a tenoroon in G: "A taste of Beethoven with tenoroon", https://www.historical-bassoon.ch/other-videos/ (10 October 2023).

7 See Table 3, "Bocal lengths and diameters" in "Measurement comparisons", in Fagottino project research articles and documents at the data repository: https://ark.dasch.swiss/ark:/72163/1/0845 (permalink), or on the project website: https://www.historical-bassoon.ch/measurement-comparisons/ (10 October 2023).

which there are isolated indications as early as the 18th century. Although small-scale bassoons (modern fagottini) have been available for use by children and young people since the 1980s, historical models, with their lighter weight and fewer keys, show significant advantages for the training of young players, but nonetheless demand a flexible approach. As a result, they form a basis for recruiting musicians directly to historical music practice who will not need to switch to historical instruments later as adults.

The contributions to this volume reflect many of the research aspects discussed above. For more information about the contents, please refer to the abstracts at the end of the book. The following highlights some of the key aspects of the texts.

The articles by Thomas Drescher and Klaus Hubmann deal with the prehistory of small bassoons in the 16th and 17th centuries. This phase is important for understanding subsequent developments, and especially for determining whether smaller instruments have an uninterrupted history and, if not, which factors call for a new approach for instruments from around 1700 onwards. Áurea Domínguez gives an overview of small bassoons during the 18th and 19th centuries. She is able to show, on the basis of surviving instruments, that the development over almost two centuries can be divided into different phases. In a case study, James Kopp takes a close look at Jean-Nicolas Savary jeune, perhaps the most important woodwind instrument-maker of the 19th century, from whom no fewer than 14 small bassoons of the highest quality are known. Through the careful evaluation of numerous documents, an impressive and detailed picture emerges of instrument making and the use of small bassoons in France in the first half of the 19th century.

These texts on aspects of historical development are followed by contributions on repertoire, performers and pedagogy, subject areas which, in addition to demonstrating valuable sources, also leave us with many unanswered questions. Donna Agrell addresses the subject of repertoire evaluation about which, as already mentioned, little concrete information unfortunately exists. Significant references to the use of small bassoons can be found in music from sources in Hamburg and corresponding locations during the first half of the 18th century, including in works by prominent composers such as Reinhard Keiser, Johann Mattheson and Georg Philipp Telemann. Zoë Matthews-Visentin systematically compiles the material and evaluates it with regard to aspects

of notation, tonal references, and performance practice. David Gasche looks at Harmoniemusik and that for military ensembles, a central repertoire for wind players in the 18th and 19th centuries. In the context of a close look at the development of these ensembles, he pursues the question of whether tenoroons were also used. Giovanni Battista Graziadio explores other regions and discusses what has been discovered about performers and performances with small bassoons in Vienna, Italy, and France. It appears that there were important influences from the Austrian capital on bassoon playing in Italy. A report based on pedagogical practice concludes this part of the contributions. Letizia Viola summarizes some very positive experiences, encouraging teachers to make small bassoons a permanent part of the education for students of all ages.

The volume closes with articles on the construction and reconstruction of small bassoons, both as 3D-printed copies and as reproductions in wood. Donna Agrell introduces the subject by describing the choice of instruments for the reconstructions and discussing specific challenges in the approach to small bassoons. Ricardo Simian relates his experiences in producing synthetic copies. He discusses changes in bore diameters compared to the originals and places a new production method using 3D printing in the larger framework of craft and industrial processes. Vincenzo Onida offers an insight into traditionally handcrafted processes in the making of small bassoons and the benefits that the experience with 3D copies has brought to these, an area where craftsmanship and digital analysis intersect.

The volume ends with a detailed catalogue of all small bassoons that have been identified to date and selected images.

Although small bassoons still hold some secrets, many issues have nevertheless been clarified. We now have a much better understanding of the material basis, and a broader picture of how these instruments were used. A great deal of experience in building and playing them has been gained, and their pedagogical use has led to promising results. Ultimately, musical practice has been provided with another instrumental voice with its own characteristics. In the remaining fuzzy areas of the subject, the informed creativity of researchers and musicians must fill the gaps. This allows for freedom, because it is the beginning of a genuinely artistic process that is irreplaceable in the production of sounding music.

Finally, we would like to thank a number of people and institutions. Donna Agrell, as the initiator of the project and tireless supporter of all involved, played a decisive role at the start and during the successful implementation of the projects. The research team did not stray from its goals, even though the restrictions imposed by the Covid pandemic prevented some planned trips to instrument collections. Contact had already been established with external experts during various project phases. Vincenzo Onida (Milan) and Ricardo Simian (Oslo) were associated members of the projects and should be mentioned here as partners concerning instrument construction. Sebastian Kirsch and Niko Plath (culturalheritage.digital; working with the "Fraunhofer Entwicklungszentrum für Röntgentechnik" in Fürth/Bavaria) carried out the scans of selected instruments. We would like to thank Conny Restle, director of the Musikinstrumenten-Museum of the Staatliches Institut für Musikforschung – Stiftung Preußischer Kulturbesitz for the loan of a fagottino by Heinrich Grenser (MIM 2373; FT50), Richard Adler, conservator of the Museum für Gestaltung Zürich for the loan of a Scherer fagottino (1963–60.102; FT30), and Josef Focht, former director of the Musikinstrumentenmuseum der Universität Leipzig for the loan of another Scherer fagottino (1548; FT44). Three private collectors in Switzerland generously allowed us access to the fagottino FT40 Anonymous and tenoroons FT6 Anonymous, and FT42 Savary jeune.

Important financial support for the various projects was provided by grants from the Swiss National Science Foundation, as well as by funds from Die Mobiliar and the Ernst Göhner-Stiftung. The Hochschule für Musik Basel/Fachhochschule Nordwestschweiz provided the infrastructure as well as substantial research funding for all projects. Special appreciation goes to Agnieszka Tutton and André Weishaupt for their prudent management of the funds.

We also would like to thank the peer reviewers, who provided feedback on the text. Marc Destrubé carried out the copy-editing with expertise in language and content. Last but not least, we are grateful to Arlette Neumann and Sonja Peschutter of the Schwabe Verlag for their, as always, careful supervision of the publication.

Basel, February 2024
Donna Agrell, Thomas Drescher, Martin Kirnbauer

Small Bassoons: Some History

Instrument Families and Small Bassoons in Michael Praetorius' *Syntagma Musicum* 1619

Thomas Drescher

Although the existence of small-format bassoons in the 18th and 19th centuries is a relatively recent discovery, different sizes of an instrument have not been an exceptional phenomenon, but rather a common occurrence in the development of instrument families since the emergence of the modern instrumentarium around and after 1500. This is equally true for the bassoon family, in which the bass instrument is the eight-foot one in C (since the late 17th century with an extension to low B'), and it remains the reference size for the whole family today, as it was in the 16th century.[1]

This paper will focus on how the development of the bassoon family in the 16th and early 17th centuries relates to more recent small bassoons, and what elements might have influenced the emergence and musical use of smaller instruments. The second volume of the *Syntagma Musicum* (*De Organographia*) and the accompanying illustrated part (*Theatrum Instrumentorum*) by Michael Praetorius will serve as a reference. It follows a very systematic approach, even and especially where there are breaks in that method.[2]

1 See the texts by Klaus Hubmann, "Hochgestimmte Fagotte (Tenorfagotte) in der Musik vom späten 16. bis zum späten 18. Jahrhundert", in: Christian Ahrens, Gregor Klinke (eds.), *Flöte, Oboe, Klarinette und Fagott: Holzblasinstrumente bis zum Ende des 18. Jahrhunderts,* München and Salzburg: Katzbichler 2011, 71–84; and by James B. Kopp, *The Bassoon,* New Haven and London: Yale University Press 2012, 222–228 (chap. 11).

2 Michael Praetorius, *Syntagmatis Musici […] Tomus Secundus De Organographia*, Wolffenbüttel: Elias Holwein 1619; digitized copy of the Bayerische Staatsbibliothek München: https://mdz-nbn-resolving.de/details:bsb10527678 (permalink); Michael Praetorius, *Theatrum Instrumentorum seu Sciagraphia*, Wolffenbüttel [Elias Holwein] 1620; digitized copy of the Bayerische Staatsbibliothek München: https://mdz-nbn-resolving.de/details:bsb00110986 (permalink); Facsimile reprint of both parts: Kassel – Basel – Tours etc.: Bärenreiter 1958 a.m.o., edited and with an afterword by Wilibald Gurlitt.

A brief look at other instrument families should help in viewing the development of the bassoon family within a larger framework, and thus lead to a better understanding of its special features. Situated at the historical intersection of the Renaissance and the early Baroque, Praetorius' treatise on musical instruments summarises the history of the 16th century, but already contains implicit references to future developments.[3]

Instrument family groups in the 16th century

In order to identify different instrument sizes, referring to the human voice ranges is still preferred, e. g. "soprano saxophone", "alto recorder", "tenor trombone", "bass tuba". The 'ideal' interval between the human voice ranges is that of a fifth. The same interval was aimed for, if possible, in the spacing of the instrument families, with a fourth as a plagal variant. These intervals also played an important role in the hexachord system that divided the tonal space in the 16th and early 17th centuries.[4] This gives the impression that the same divisions are used for human voices as with instruments. As will be seen, this is only true to a limited extent.

It is first necessary to clarify the terminology used by Praetorius. At the beginning of his treatise, he defines the terms "Accort" and "Sorten", from which it appears that "Accort" is to be understood as a 'registers of pipes / bassoons and

I use the term "bassoon" here in a general, generic form, regardless of whether it is made of one piece of wood ("dulcian") or in four parts ("Fagott/fagotto"), as has been customary since the baroque bassoon in the last third of the 17th century. Michael Praetorius already used the two terms synonymously: "Fagotten und Dolcianen (Italis Fagotto & Dolcesouno [sic!]) werden mehrertheils indifferenter also genennet" ('Bassoons and dulcians (in Italian Fagotto & Dolcesuono) are mostly called so without distinction'), – *Syntagma* II, 27 [recte: 38].

3 Reference should be made here to the essential study by Frank P. Bär, who has compared the relevant treatises of the late Middle Ages, the Renaissance and the early Baroque with regard to family formation: Frank P. Bär, *Holzblasinstrumente im 16. und frühen 17. Jahrhundert. Familienbildung und Musiktheorie*, Tutzing: Hans Schneider 2002 (Tübinger Beiträge zur Musikwissenschaft 24).

4 Frank P. Bär (*Holzblasinstrumente*, see n. 3), for example, is underlaying the different instrument sizes in the treatises of the time with the intervals in the hexachord system.

other instruments',[5] analogous to a group of related organ stops. It is surprising, however, that he mentions bassoons ("Fagotten") as an explicit example of related instruments, in addition to the general term for wind instruments ("Pfeiffen" / 'pipes').[6] In an "Accort", there are only wind instruments of a single type, and he refers to each instrument, or the range of each instrument, that is, "Sorten".[7] Unfortunately the terms are not used as consistently throughout the book as described here. "Stimmwerck" is used in the part showing woodcuts of the instruments (*Theatrum Instrumentorum*), grouped as a 'family' with the recorders, for example.[8] On the other hand, the brackets above the columns of the Tabella universalis also denote an "Accort" as a 'family' in the narrow sense.[9] In the individual columns of the Tabella universalis, "Sort." with an order number designates a single instrument in each case. This reading is confirmed by the table at the beginning of the treatise,[10] which distinguishes between "Accort od[er] Stimmwerck von Instrumenten", each of which has three, four, five, seven or eight sizes of instruments in the 'family'. At this point, there are five sizes ("Sorten") of bassoon, from the double bassoon ("Dop-

5 Praetorius, *Syntagma* II (see n. 2), 12. "Ein Accort, ist ein gantz Stimmwerck von Pfeiffen / Fagotten vnnd andern Instrumenten, do von dem vntersten Baß vnd der größten Pfeiffen an / immer eine nach der andern / biß zur kleinesten Discant Pfeiffen folget." ('An Accort, is a whole set of registers of pipes / bassoons and other instruments, where from the lowest bass and the largest pipes onwards / always one follows the other / up to the smallest descant pipes.') – all translations by the author.

6 Praetorius derives his terminology from organ building ("Stimmwerck"). He possibly wants to distinguish between labial pipes ("Pfeiffen"), i. e., wind instruments that are played over a sharp edge, and lingual pipes ("Fagotten vnnd andern Instrumenten"), i. e., wind instruments with reeds, and the imitation of other instruments with reed pipes.

7 Praetorius, *Syntagma* II (see n. 2), 12. "Sorten ist nur eine einige Art von Pfeiffen in demselben Accort;" ('Sorten is only one single kind of pipe in the same Accort;').

8 Praetorius, *Theatrum Instrumentorum* (see n. 2), Plate IX, legend, no. 1: "Blockflöiten/ gantz Stimwerck."

9 This can only be seen in the table of the trombones (*Syntagma* II [see n. 2], 20, Table V.), in which four different instrument sizes are numbered as one "Sort." each with 1 to 4, and these are summarised above the columns with a bracket which is described as "Ein gantz Accort" ('a whole Accort'). This applies tacitly to all the bracketed instrument groups on the following pages in the third chapter of the Tabella universalis, pages 18 to 30.

10 Praetorius, *Theatrum Instrumentorum* (see n. 2), 13.

pelfagott") in contra-F' to the descant; three "Chorist-Fagott" and two small bassoons ("Fagott piccolo") are included in the panoply of instruments, which makes a total of eight instruments in five sizes.

In the Tabella universalis, consorts belonging together are also indicated by assigning vocal ranges to individual instruments (see below for the example of the recorders). Further information on the instruments can be found in Praetorius' descriptive text[11] and also in the woodcuts of the *Theatrum Instrumentorum*, where all the instruments of a family are depicted to scale.[12] The bassoons can be found in Plate X.

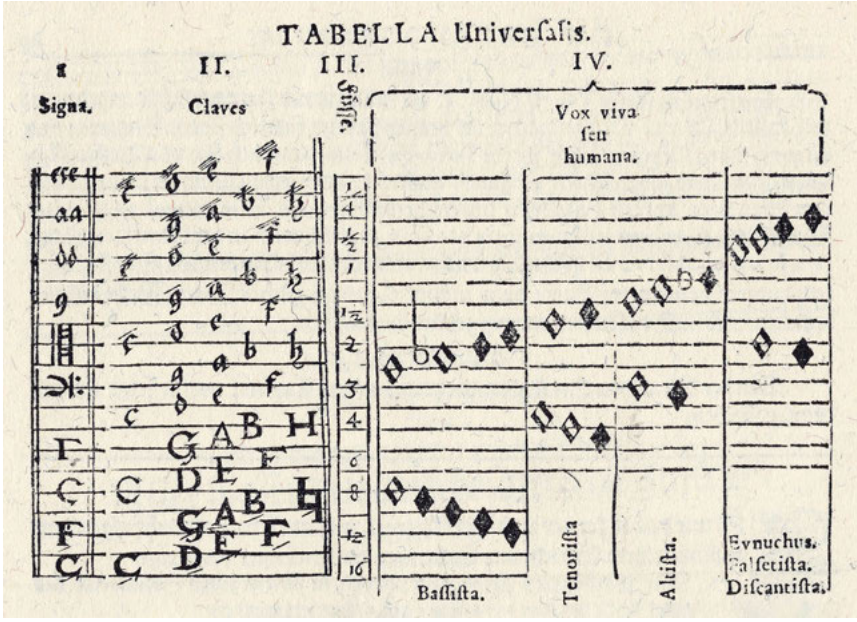

Fig. 1: Michael Praetorius, *Syntagma Musicum* II, Wolfenbüttel 1619, 20 (detail): "Tabella universalis" (I–)IV, "Vox viva seu humana". Facsimile reprint, edited by Wilibald Gurlitt, Bärenreiter-Verlag Karl Vötterle GmbH & Co. KG, Kassel.

11 For the bassoons: Praetorius, *Syntagma* (see n. 2), 27 [recte: 38] "Das XI. Capittel. Fagotten : Dolcianen".

12 Praetorius, *Theatrum Instrumentorum* (see n. 2). The corresponding scale can be found at the foot of each woodcut. The units refer to a foot in Brunswick measure, which is derived from the cubit (= 57.1 cm). A cubit is two feet long, so one quarter of a Brunswick

As already mentioned, the human voice, in the sense of an "imitatio naturae", establishes a reference for the tonal range of the instruments. Praetorius takes this into account in Plate IV of the Tabella universalis (Fig. 1: "Vox viva seu humana" / 'Living or human voice') and indicates four human voice ranges: bass, tenor, alto, and treble ("Bassista", "Tenorista", "Altista", "Discantista").

Their range is an octave and a third (alto), or an octave and a fourth (tenor and treble); only the bass substantially deviates, with a range of an octave and a seventh, the extended range being primarily in the low register, down to C. This extends considerably beyond the range of an ordinary bass voice in an ensemble (F or E would be expected). The notes notated in black, in the high register up to d' and in the low register down to F', indicate unusual ranges that "can be achieved by a practised and experienced instrumentalist [here: vocalist]".[13]

Praetorius provides the reason for the extensive range of the bass in the preceding text: 'For this C is the right lowest tone of a right bass singer in princely chapels, if he can reach this note naturally with a full and loud voice.'[14] For the extreme extension in the low range, he cites as examples members of the Bavarian court chapel under Orlando di Lasso – the Fischer brothers from Landshut and a certain Grasser – who could reach a low F' in "Chorton" and thus even an E' in "Cammerton".[15]

It may well have suited Praetorius that the reference tone C at the lower limit of the eight-foot register could also apply to the vocal parts, regardless of the average ability of the singers. The extremely low F' is also an important lower limit for the contra instruments. The three higher vocal registers are

cubit is 14.275 cm, which in turn is 6 inches, as Praetorius shows in the reference scale on the back of the title page: "Dieses ist die rechte Lenge und Maß …" ('This is the right length and measure …'). See Fritz Verdenhalven, *Alte Maße, Münzen und Gewichte aus dem deutschen Sprachgebiet*, Neustadt/Aisch: Verlag Degener 1968, 21 or Wolfgang Trapp and Heinz Wallerus, *Handbuch der Maße, Zahlen, Gewichte und der Zeitrechnung,* Stuttgart: Reclam ^{5}2006, 251; here the Brunswick cubit is given exactly as 57.07 cm.

13 Praetorius, *Syntagma* II (see n. 2), 19.

14 Praetorius, *Syntagma* II (see n. 2), 17. "Denn diß C. ist die rechte Tieffe eines rechten Bassisten in Fürstlichen Capellen / wenn er dasselbe mit voller vnd gantzer Stimme natürlich haben kann."

15 Praetorius, *Syntagma* II (see n. 2), 17.

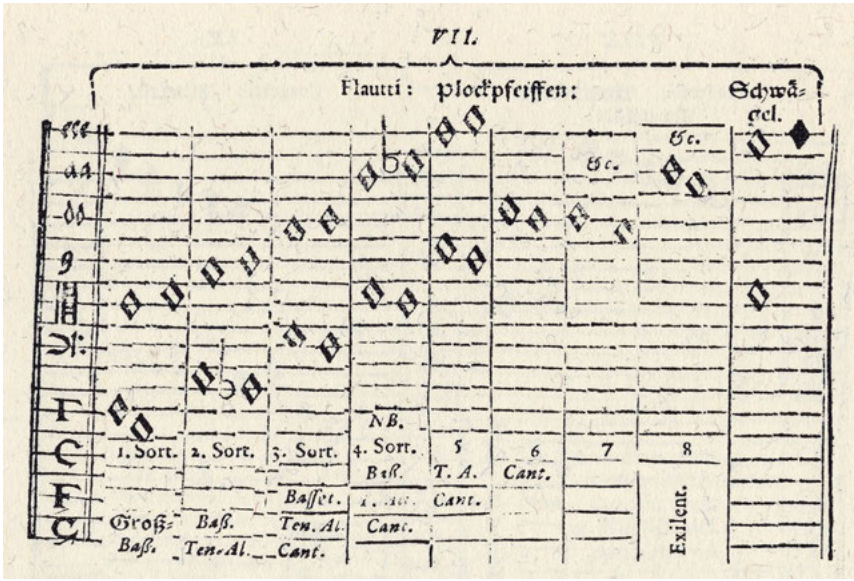

Fig. 2: Michael Praetorius, *Syntagma Musicum* II, Wolfenbüttel 1619, 21 (detail): "Tabella universalis VII, Flauti: Plockpfeiffen:". Facsimile reprint, edited by Wilibald Gurlitt, Bärenreiter-Verlag Karl Vötterle GmbH & Co. KG, Kassel.

within their normal range for the lowest notes, which are usually a fifth apart (tenor: B; alto: f; treble: c'). Only between bass and tenor is there a special interval of a seventh.

Intervals of a fifth are, as already mentioned, used for the family designations of the instruments, where this is possible. The clearest system is found for the recorders, which in the Renaissance – if the so-called consort flutes are considered – have approximately the same ambitus as human voices.

As is easily recognisable, units that belong together – let us call them a 'consort' (Praetorius does not offer a term for this) – are always composed of three voice registers, which, regardless of the actual position of the voices, are called "Baß", "Ten. Alto" and "Cant.". Alto and tenor form a uniform category of middle voices, as the designations at the bottom of the table clearly indicate.

In the case of the recorders (Fig. 2), this constellation of three related voices wanders through all sizes, so that consorts of higher and lower registers are created. The same instrument can function as a bass in a higher register, as

a middle voice in a lower register, and as a treble in an even lower one.[16] The prerequisite, however, is that neighbouring registers are always combined.

There are also certain higher instruments listed that are placed outside the system; Praetorius labels them 'exiled'.[17]

Three – and only three – voice registers, bassus, tenor and cantus, are already found in prints of instrumental music from the early 16th century, for example in the Bicinia by Eustachio Romano from 1521, one of the first illustrations of printed compositions for melody instruments.[18] Further and significant evidence of the various divisions of middle-range vocal and instrumental parts can be found in Orlando di Lasso's Bicinia print from 1577, where there are 12 texted bicinia for voice, and 12 un-texted ones for instruments.[19] The vocal pieces make use of four registers (cantus, altus, tenor, bassus), but the instrumental pieces only three (cantus, tenor, bassus). Lasso does not give any information about performance with specific instruments. The examples show that Praetorius draws on an instrumental ensemble practice that is already a century old and is presumably linked to earlier three-part compositions, whose central voice is the tenor.

The only 16th-century three-part consort of instruments to survive is the violin family, referred to in Praetorius' Tabella as "Viole de Braccio. Violins".

16 See, for example, the instrument in the column of the "3. Sort." which, depending on the position in the consort, can be "Basset", "Ten. Al[t]." or "Cant[us]".

17 "Exilent". Lat. "exsilare": to go beyond, to jump out; but also: "exilis": skinny, lanky, small.

18 *Musica Duorum Eustachij Romani de macionibus excusit […] Ingenti cura & industria magristri Johanis Jacobi de pasotis de Monticulo Regiensis Impressum fuit hoc opus Musicae,* Rome 1521 [RISM ID no.: 990017273]; Digitized copy of the Österreichische Nationalbibliothek: http://data.onb.ac.at/rec/AC09847055 (28 June 2023). On this Thomas Drescher, "'Poi le parole!'. Duos von Eustachio Romano (1521) mit Textierungen von Erasmus Rotenbucher (1549)", in: Martin Kirnbauer (ed.), *Beredte Musik. Konversationen zum 80. Geburtstag von Wulf Arlt*, Basel: Schwabe 2019, 105–115.

19 Orlando di Lasso, *Novae aliquot et ante hac non ita vsitatae ad duas voces Cantiones suauissimae, omnibus Musicis summè vtiles: nec non Tyronibus quàm eius artis peritioribus summopere inseruientes*, Munich: Adam Berg 1577 (RISM ID no.: 990036689); digitized copy of the Bayerische Staatsbibliothek München: https://stimmbuecher.digitale-sammlungen.de/view?id=bsb00071982 (28 June 2023).

To this day it has three voice ranges in the eight-foot register, designated by Praetorius as "Baß Viol de Braccio", "Tenor Viol." and "Discant Viol. Violino".[20] The double bass as a sixteen-foot instrument, belonging to the family of viole da gamba, was 'adopted'. Praetorius also lists a large quint bass in F' ("Groß Quint-Baß.") of the "Viole de Braccio" family in the Tabella, which has not survived in this form.[21]

The reason for the sustained existence of this ensemble in particular lies in its constituent role in the orchestra, whose roots can be traced to the Italian and French violin ensembles of the 16th century, and in their further evolution, especially at the French court. It is a success story that extends without interruption to the present day.[22]

In several examples, it can now be seen that Praetorius pays careful attention to the relationships within the consort formation. The fact that the consistency of the interval between the instruments was important is demonstrated once again by the table of the shawms, which now finally enter the field of double-reed instruments (Fig. 3).

Here, although their fundamental notes are missing in musical practice, two instruments are inserted hypothetically, as important steps in the sequence of voice ranges,[23] one instrument in f and a high one in c'. Above these instruments, as in the case of the recorders, the allocation to the various con-

20 Praetorius, *Syntagma* II (see n. 2), 26.

21 On the development of the violin family, see: Jürgen Eppelsheim, "Stimmlagen und Stimmungen der Ensemble-Streichinstrumente im 16. und frühen 17. Jahrhundert", in: Thomas Drescher (ed.), *Capella Antiqua München. Festschrift zum 25jährigen Bestehen*, Tutzing: Schneider 1988 (Münchner Veröffentlichungen zur Musikgeschichte, 43), 145–173: 158–167. Eppelsheim also offers a plausible explanation for the origin of the unusual octave spacing between violoncello and viola. The 'systemic' bass instrument, on the other hand, was in F and thus, in accordance with the rules, a fifth below the viola, which Praetorius also states as an alternative to the more 'modern' C tuning of the "Baß Viol de Braccio".

22 John Spitzer and Neal Zaslaw, *The Birth of the Orchestra: History of an Institution, 1650–1815,* Oxford: Oxford University Press 2004.

23 Praetorius, *Syntagma* II (see n. 2), 22. He writes in two different columns of the table, between no. 5 and 6, and between no. 6 and 7: 'A very high [instrument] would also be needed for this pitch' ("In diesem Thon were auch ein[e]r von[n]öte[n]" and "In diesem Thon wehre auch ein sehr hoch von[nöten]").

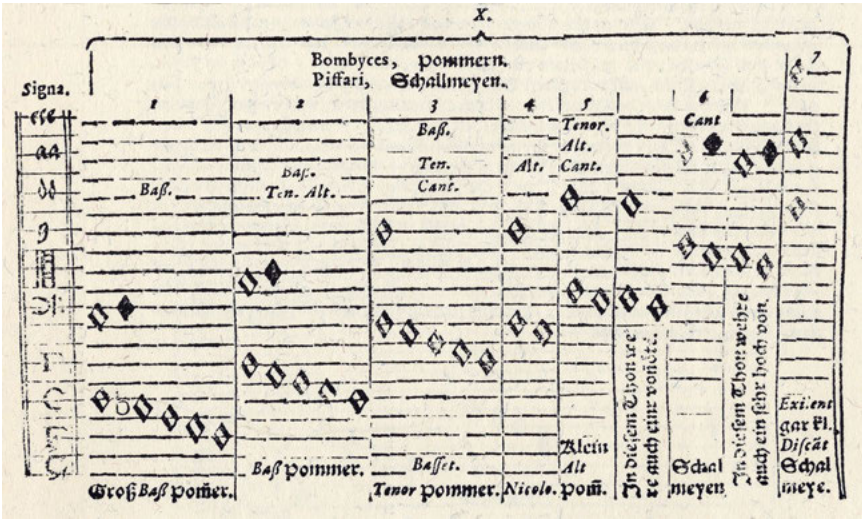

Fig. 3: Michael Praetorius, *Syntagma Musicum* II, Wolfenbüttel 1619, 21 (detail): "Tabella universalis X, Bombyces, Pommern. Piffari, Schallmeyen.". Facsimile reprint, edited by Wilibald Gurlitt, Bärenreiter-Verlag Karl Vötterle GmbH & Co. KG, Kassel.

sorts can be seen. The two added ones are not assigned numbers, for they do not exist. But a particularly high 'exiled' instrument is also listed here, whose lowest note is the unstable b natural.

In the commentary on shawms, Praetorius explains the family principle in greater detail than in other parts of his publication:[24]

> Here, however, it must be noted that from time immemorial and even today almost all wind instruments, such as flutes, bombards, shawms, crumhorns, etc., are built and tuned a fifth apart in groups ("Accorten") or registers ("Stimmwercken"): so that

24 Praetorius, *Syntagma* II (see n. 2), 26 [recte: 37]. "Allhier ist aber zu mercken: Daß von alters her und auch noch anjzo meistentheils alle Blasende Instrumenta, als Flötten / Pommern / Schalmeyen / Krumbhörner / etc. in den Accorten oder Stimmwercken / eins vom andern alzeit eine Quinta ist gearbeitet / und gestimmet worden: darumb daß man allzeit (wie ich zur Nachrichtung in vorhergehender Tabell darbey notiret) drey vnd drey zusammen / als eine Art zum Bass, die ander zum Tenor vnd Alt, (Denn diese beyde Stimmen / Tenor vnd Alt, können allzeit auß gleichlautenden vnnd einerley Corporibus vnd Instrumenten musicirt werden) die dritte aber zum Cantu, gebrauchen kann."

> one always [puts] three and three together (as I have noted for information in the previous table),[25] so [that one can use] the first kind of instrument as bass, the second as tenor and alto (for the two voices, tenor and alto, can always be played from instruments sounding the same and built with the same corpus), but the third as cantus.

This again reveals the importance of the interval of the fifth in consorts, and the composition of the three adjacent voice parts, whereby it is explicitly stated that the tenor and alto parts are played by one and the same type of instrument.

Another detail in Tabella X is important for the consort system: a distinction is made between individual instrument names for the tenor shawm ("Tenor Pommer", no. 3, in G) and the small alto shawm ("Klein Alt Pom[mer]", no. 5, in g), which are an octave apart; in between, no. 4 is another alto (only this register is attributed to the instrument), the "Nicolo", in c.[26] Praetorius now has to distinguish between the two alto instruments, although they are only one note apart, which disturbs the idea of a three-part consort. The "Nicolo" seems to be an auxiliary instrument, to bridge the octave gap between the tenor and the small alto.[27] With the inclusion of the "Nicolo", this creates a consort with four distinct parts. In his commentary, Praetorius even speaks of ensembles with up to five different instruments, which are, however, difficult to tune.[28]

25 This probably refers to Table X. See Fig. 3.

26 A "Basset: Nicolo" is illustrated on Plate XIII of the *Theatrum Instrumentorum*, next to the crumhorns. The instrument has a wind capsule over the reed like the crumhorns, but it is built straight with a simple tube and reaches C as its lowest note, as the inscription on the keys indicates.

27 Praetorius points out in the commentary (*Syntagma* II, see n. 2, 16;) that the Nicolo is the same size as the 'basset / tenor shawm' ("Basset. Tenor Pommer") on G, but due to the equipment having only one key in the lower register instead of G it only reaches c. It is therefore a kind of hermaphrodite, a tenor in size but an alto in its playing condition.

28 Praetorius, *Syntagma* II (see n. 2), 26 [recte: 37]: 'But if you also want to use the fifth instrument in the low or high register, it is almost difficult to tune [them] together' ("Wenn man aber das fünffte Instrument in der Tieffe oder Höhe auch noch darzu brauchen will / so ist es fast mühsam zusammen zu accordiren").

Bassoons/Dulcians

In the closely related family of bassoons ("Fagotten. Dolcianen", Fig. 4) the situation is no less complicated.

In addition to the double bassoon ("Doppel Fagott"/"Quint Fagott") and the large bassoon ("Fagott: grando"/"Quart Fagot"), both of which reach down into the contra octave (F' and G' respectively), three other instruments are listed: first of all, the most common "Chorist Fagott" in C with various names ("Fagott", "Corthol", "Doppel Corthol."), followed by two higher ones: a small bassoon ("Fagott piccolo.") in G, and an unnamed one an octave above in g, an irregular spacing, as already observed in the shawm family. Praetorius does not correct this by adding instruments in between.

Summing up, in the case of the bassoon, the Tabella universalis implicitly describes a coherent family,[29] in which the "Chorist Fagott" forms the middle voice, and the bass is available in two variants. The descant voice is provided by the "Fagott piccolo" in G.

Plate X of the *Theatrum Instrumentorum* (Fig. 5) presents a different picture: Here, the inscription explicitly refers to a coherent four-part family that differentiates alto and tenor, as with the shawms. The index is confusing, however, and needs explanation: No. 1, the "Sordu[n]en-Bas" in G', actually belongs to another instrumental grouping, as evidenced by its assignment to another instrumental table.[30] No. 2 designates the equally low 'Double Bassoon in G' ("Doppel-Fagott bis ins GG", named in the Tabella as "Fagott: grando"); the alternative instrument in F' (in the Tabella 'Double Bassoon' ["Doppel Fagott"]) is not illustrated. No. 3. names the 'Open Chorist-Fagott' ("Offen Chorist-Fagot") in C, and No. 4 is a stopped ("Gedact") variant of

29 For comparison, see the "Sordoni" and "Doppioni" in Table XII and XIII at the bottom of page 23 (Fig. 4), in which the consorts are clearly labelled.

30 See Fig. 5. Frank P. Bär, *Holzblasinstrumente* (see n. 3), 162, however, recognises in the instrument a 'round-turned construction variant of a quarto dulcian with a key instead of the second thumbhole'.

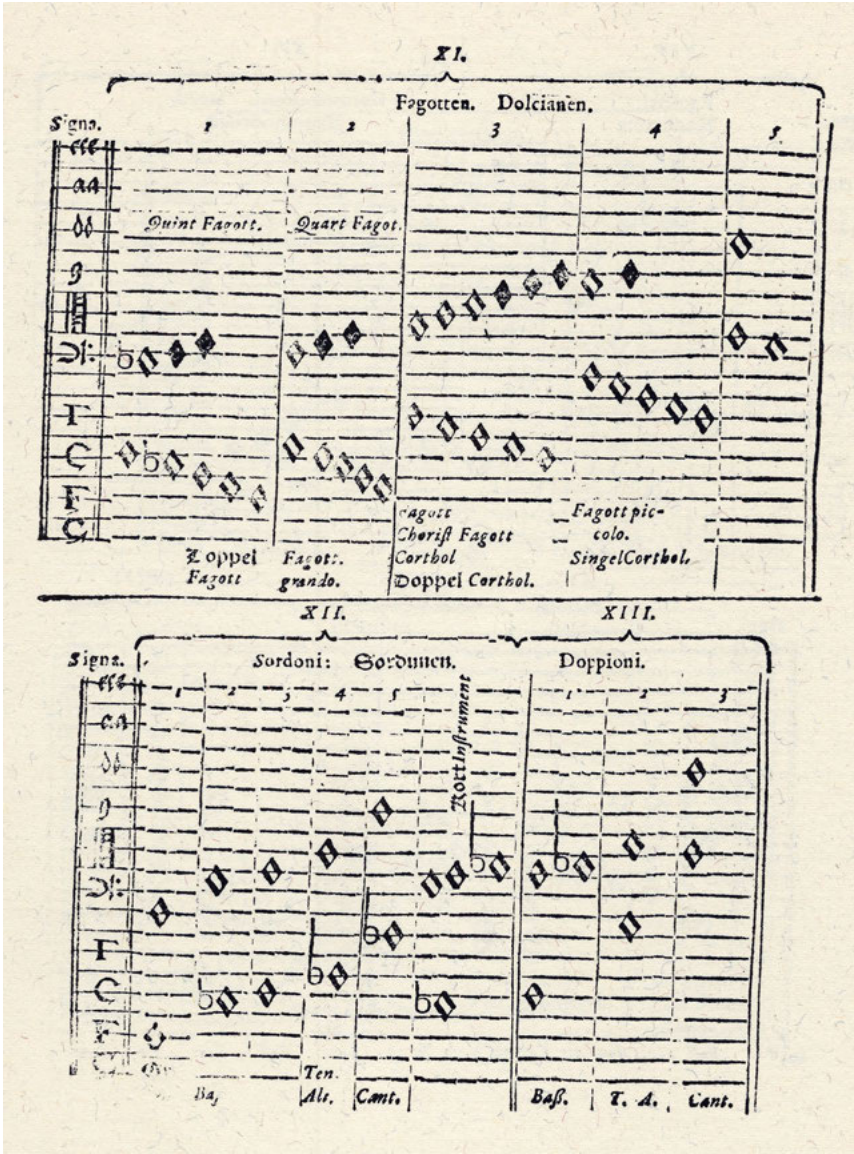

Fig. 4: Michael Praetorius, *Syntagma Musicum*, Wolfenbüttel 1619, 23: "Tabella Universalis XI, Fagotten. Dolcianen.". Facsimile reprint, edited by Wilibald Gurlitt, Bärenreiter-Verlag Karl Vötterle GmbH & Co. KG, Kassel.

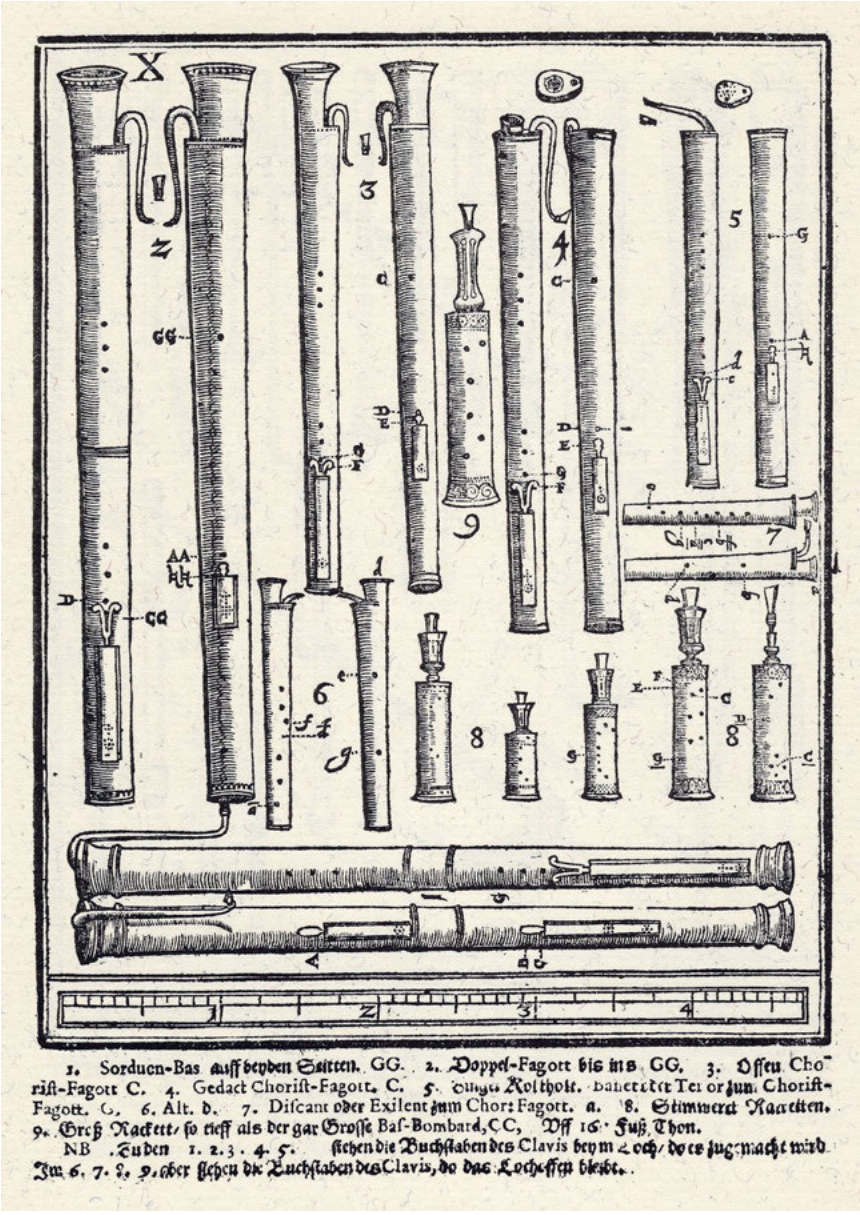

Fig. 5: Michael Praetorius, *Theatrum Instrumentorum,* Wolfenbüttel 1620, Plate X. Facsimile reprint, edited by Wilibald Gurlitt, Bärenreiter-Verlag Karl Vötterle GmbH & Co. KG, Kassel.

it.[31] No. 5. 'Single Curtal. Basset or Tenor to Chorist-Fagott. in G' ("Singl. Korthold. Basset oder Tenor zum Chorist-Fagott. G.") already refers to the lower instrument in its name, and it corresponds to the 'piccolo bassoon' ("Fagott piccolo") in the Tabella. No. 6 is an "alto" in d, i. e. another fifth away from the "tenor", an instrument that the Tabella does not include. And finally, No. 7 is a 'descant or unusual high instrument to the Chorist-Fagott' ("Discant oder Exilent zum Chor: Fagott") in a, again a fifth higher. What is striking about this highest instrument is that it is described as 'exiled' and thus as outside the nuclear family; the second peculiarity here is the explicit reference to the eight-foot bass, the Chorist-Fagott, which is indicated in this way as the linchpin of the entire family of instruments.

Thus, Praetorius presents five pitches for the bassoon family in the table, but, unlike for other instruments, he does not describe any bassoon consorts in the Tabella. The instruments with a range of about two octaves would allow for this in practice; only the treble instrument (no. 5) reaches an octave and a fourth above the g. The discrepancies between Plate X of the *Theatrum Instrumentorum* and page 23 of the Tabella are striking however. The treble instrument (no. 5) of the Tabella, although not designated as such, is in g, but in the illustration of the instruments it is in a, and the alto instrument in d of the Plate is missing in the Tabella, as already mentioned. There it would fill the gap to the "Fagott piccolo" in G. In the overview of the "Accort" on p. 13 of the *Syntagma,* the alto is also not mentioned.[32]

The interpretation of these differences remains open for the time being. It is possible that, by the beginning of the 17th century, the "Chorist Fagott" was already so dominant as a bass instrument in mixed ensembles, vocal and instrumental, that a homogeneous consort was of secondary importance.[33]

31 This refers to instruments with a sieve-like cap on the air outlet, which is supposed to make the sound quieter and softer. See Praetorius, *Syntagma* II (n. 2), 27 [recte: 38]. An anonymous historical example with a sieve-like brass cap has been preserved in the instrument collection of the Schlossmuseum Linz (shelfmark: Mu 29), see Bär, *Holzblasinstrumente* (n. 3), 496.

32 Frank P. Bär summarises the differences in Praetorius' data in tabular form: Bär, *Holzblasinstrumente* (see n. 3), 162.

33 Frank P. Bär points out that the seven-finger fingerings of all six bassoon instruments referred to by Praetorius result in a continuous stratification into fifths (Bär, *Holzblasinstru-*

It is clear, however, that Praetorius describes a bassoon in the tenor register, or, alternatively, a 'small bass to the Chorist-Fagott' in G, and thus a type of instrument that we will encounter again in the 18th and 19th centuries, but with a different design. The treble instrument (in g or a), on the other hand, remains without a successor, and the alto instrument in d also finds no continuation, although later octave fagottini are in c and thus only a whole tone away from Praetorius' instrument. The reason for this is presumably because the distance of an octave makes fingerings possible that players would have been accustomed to from the bass instrument.

Michael Praetorius draws from practice and tries to interpret this systematically. His system, for its part, contains contradictions, and the question arises as to which reality it reflects. As Klaus Hubmann was able to show in summary, several historical bassoons of a smaller form exist from the 16th and 17th centuries, and traces of these can also be found in inventories and historical correspondence. In addition, there are a number of compositions that make explicit use of small bassoons, both in the homogeneous consort and as soloists and in pairs. In the latter roles, treble and tenor instruments were commonly used.[34]

Special instruments of the 18th century

With these remarks, the link is made to the more recent history of small bassoons. As is well known, the grouping of instruments into families lost importance towards the end of the 17th century. Mostly single instruments or pairs of instruments remained, with the exception of the violin family in the newly formed orchestra, as already described. A look at some of the examples discussed by Praetorius confirms this: recorders, whose range had grown to two and a half octaves and more, became solo instruments or appeared in pairs in the same register, in larger or smaller mixed ensembles. The trio sonata, which became widespread at the end of the 17th century, played an important role in

mente [see n. 3], 163). This would underline the striving for a "family" stratification of the instruments despite the described problems of classification.

34 Hubmann, "Hochgestimmte Fagotte" (see n. 1); see also the author's contribution in this volume.

the paired instrumentation of mostly high melody instruments. In the case of recorders in particular, there appeared a significant new tendency towards the construction of special instruments for special tasks. A prominent example is the so-called voice flute in d, which gave access to the large repertoire for violin or transverse flute.

Particularly rich in special instruments is the middle register of the high double-reed instruments, successors to the "Pommern und Schalmeyen" in Praetorius. The oboe d'amore is an example of such an instrument, in a and thus a third lower than the important treble instrument. It is intended for special use, with a particular timbre. Similarly, the oboe da caccia is found almost exclusively in the Leipzig context. Like the cor anglais and the taille, it is in F, a fifth below the (treble) oboe. In the old 'family' context therefore, it belongs in the tenor register. The bassoon, with its systematic fundamental C, is a fourth below it. The intervals within the family are thus maintained, but in appearance, timbre and composed literature, the oboe da caccia must be thought of as clearly outside a consort or family.

An even later special instrument of the 18th century is the basset clarinet in notated C. Its prominent use in W. A. Mozart's late compositions made the instrument popular. It extends the clarinet's low range, and thus makes a particularly attractive register even more usable. Similar tonal effects are behind the use of the basset horn and the cor anglais. Obviously, the guiding idea behind these particular instruments is the search for special timbres, rather than any consideration of fitting into traditional consorts.

So what does this mean for the small bassoons of the 18th and 19th centuries? It is not difficult to place the three existing variants in F/G (tenoroons) and c (fagottino) in a 'family' context. But they were no longer used in this context, only as individual instruments or in pairs, and, in the case of the tenor instruments, as an alternative to ordinary bassoons for playing solo parts in the high register.[35] Sound and practical aspects of playing coincide here. Their occasional appearance in mixed wind ensembles or Harmoniemusik does not replace the homogeneous consort, but rather refers to the repertoire and sound

35 See the observations of Áurea Domínguez, Donna Agrell and Giovanni Battista Graziadio in this volume.

of contemporary orchestras in which the different colours of the wind instruments were explored.

It is difficult to determine whether the special instruments of the 18th and 19th centuries are based on their 16th and 17th century ancestors, or were created 'ex ovo', as it were. Michael Praetorius gives a terminologically telling hint when he refers to the instrument No. 5 in the legend to Plate X as '[…] Basset or Tenor to the Chorist-Fagott. in G'.[36] This could imply that the tenor instrument can also be used as a small bass ("Bassett"), i. e. as an instrument that represents the bass in a higher register. If one follows this idea, then the function of tenoroons in the 18th and 19th centuries was foreshadowed by Praetorius.

36 Praetorius, *Theatrum Instrumentorum*, Plate X, legend (see Fig. 5). The Term "Basset" is also found in other instrument families, e. g. the shawms and recorders.

Reflections on the Origin, Distribution, and Repertoire of the High-Pitched Dulcian, Especially in the Northern Italian and German-Speaking Regions

Klaus Hubmann

Michael Praetorius writes at the beginning of the eleventh chapter of the second volume of his *Syntagma musicum* (*De Organographia*): "Bassoons and Dulcians (Italis Fagotto & Dolcesouno [sic]) are named more or less indiscriminately".[1] This sounds familiar to our ears at first, but, apart from the fact that in none of the Italian sources of the 16th or 17th centuries known to date is the term *dolcesuono* to be found – Praetorius has arbitrarily Italianised a German or Latin term – the question arises whether his finding of 1619 would have been just as valid a few decades earlier? Was the instrument we now refer to as the dulcian called a *fagotto* from the beginning? Where and when does the name *Dulzian* appear? Woodwind instruments with a double bore, i. e., designed more or less along the lines of the U-shaped trombone slide, were a novelty in the first half of the 16th century. So it should come as no surprise that instruments using this innovative construction principle became the eponym for several instruments in Northern Italy. First of all, *fagotto* means nothing other than "A burden or heap of many things/so bound together."[2] Chronologically, the first instrument so named is probably the elaborately designed bagpipe-like *phagotum* or *fagotto* by Afranius of Ferrara (Albonesii)

1 Michael Praetorius, *Syntagma musicum. Tomus Secundus. De Organographia*, Wolfenbüttel 1619, 27 (recte: 38). "Fagotten und Dolcianen (Italis Fagotto & Dolcesouno [sic]) werden mehrertheils indifferenter also genennet".

2 Levinus Hulsius, *Dictionarium Teutsch-Italiänisch Vnd Italiänisch-Teutsch*, Frankfurt/Main: Nicolaus Hofmann 1618, [Part 2:] *Dittionario Italian' et Alemano*, 143. "Fagotto. Ein Bürd / oder Häufflein vieler Ding / so zusammen gebunden seynd."

(ca. 1489–ca. 1565), which was developed around 1515 and played by means of a bellows. Although it was not widely used, it became unexpectedly well known through two highly regarded publications from the first half of the 16th century. The first is the study *Introductio in Chaldaicam linguam* by the humanist Teseo Ambrogio degli Albonesi (1469–1540), a nephew of Afranius, on Syrian, Armenian, Coptic and even Etruscan languages, which was published in Padua in 1539. Dedicated to his uncle, it contains a detailed description of this idiosyncratic instrument, including an elaborate illustration.[3] The second is the *Banchetti compositioni di vivande,* published ten years later by Cristoforo di Messisbugo (Messi detto Sbugo), who was master of ceremonies for Alfonso I and his son Ercole II d'Este at the court of Ferrara from 1524 until his death in 1548. There, Afranius' performances with "il suo fagotto" at court banquets are mentioned for the years 1529 and 1532.[4] The book, which appeared posthumously in 1549, includes a collection of 315 recipes, and is considered to be the first printed cookbook in history. It was reprinted in Venice in several editions from 1557 to 1610 under a different title, *Libro novo nel qual s'insegna a far d'ogni sorte di vivanda*.[5] The term *fagotto* was therefore largely reserved for this instrument in the Ferrara area, and later also in Venice. In 1706, Zaccaria Tevo (1651–1709) attributed the invention of the (later) bassoon to Afranius in his *Il Musico Testore* – "Afiano Pavese trovò il Fagotto",[6] a legend that Johann Gottfried Walther[7] and Johann Heinrich Zedler[8] spread in the German-speaking world just over a quarter of a century

3 Teseo Ambrogio, *Introductio in Chaldaicam linguam […],* Padua 1539, fol. 178^{v} and fol. 179^{r}.

4 *Cena di pesce*, 20 May 1529 (Hyppolito d'Este) and *Cena domestica,* 21 November 1532 (Alphonso, Duca di Ferrara); Cristoforo di Messisbugo, *Banchetti compositioni di vivande,* Ferrara 1549, fol. 2^{v} or fol. 9^{r}.

5 New edition as "*Libro novo nel qual s'insegna a far d'ogni sorte di vivanda*", Venice 1557; further editions of 1559, 1596, 1600 and 1610 in the Bayerische Staatsbibliothek, Munich.

6 Zaccaria Tevo, *Il Musico Testore*, Venice 1706, 12.

7 Johann Gottfried Walther, *Musicalisches Lexicon Oder Musicalische Bibliothec*, Leipzig 1732, 11.

8 Johann Heinrich Zedler et al, *Grosses vollständiges Universal Lexicon Aller Wissenschafften und Künste,* vol. 1, Halle and Leipzig 1732, 727.

later, and which, as is well known, persisted into the 20th century in numerous writings on organology.[9]

Twelve years ago, in his study[10] about a beautiful drawing by Giovanni da Udine (1487–1564) from Berlin,[11] Martin Kirnbauer plausibly demonstrated that, among other things, the double-bored columnar flute, which we know from the workshop of the Rauch family of instrument builders from Schrattenbach, was also referred to as a *fagotto.*

Probably the earliest reference to the dulcian comes from a report of the Accademia Filarmonica di Verona from March 1546, which states that, among other instruments, "dui basonj soto il dito fagoto" were procured from Venice, i. e., two bass instruments, which are also referred to by the name *fagotto.* The term *bassono* appears a few times later in Venetian documents directly connected with the instrument makers Jacomo Bassano (1518–1566) and his son-in-law Santo Griti da Sebenico (today Šibenik/Cro) (ca. 1530–1586), who later also called himself *Bassano.* In the first of these Venetian sources, in a 1559 cost estimate for the *Pifferi del Doge*[12], "pifari bassoni da quatro chiave, as well as bassoni curti" are listed, among others. Which instruments were meant here? There are two possibilities: the "pifari bassoni da quatro chiave" could be understood as bass bombards (Basspommer) with a key for F and three low extension keys down to C. In this case, the "bassoni curti" would probably be short bass instruments, i. e. most likely bassoons, which are only about half as long due to their double bore. On the other hand, it is also possible that "pifari bassoni da quatro chiave" actually refers to bassoons which, like the richly decorated dulcian at the Gesellschaft der Musikfreunde in Vienna, now kept in the collection of early musical instruments at the Kunsthistorisches Museum (KHM GdM 117), were equipped with four keys instead of

9 For a detailed account of the history surrounding the *phagotum of* Afranius, see: James B. Kopp, *The Bassoon,* New Haven and London: Yale University Press 2012, 9–15.

10 Martin Kirnbauer, 'si chiama fagotto': Concerning a drawing of musical instruments by Giovanni Ricamatori, otherwise known as Giovanni da Udine, in: *Early Music* 39/2 (2011), 5–7.

11 Kupferstichkabinett, Staatliche Museen zu Berlin, Kdz 5223.

12 Archivio di Stato di Venezia, Notarile Atti, Atti Giacomo Formento, busta 5584, 30 March 1559; see: Giulio M. Ongaro, "16th-century Venetian Wind Instrument Makers and their Clients", in: *Early Music* 13/3 (1985), 397.

the usual two. In this case the "bassoni curti" could probably be interpreted as bassoons in a higher register. In any case, there are some indications that the name *bassono* was not only used to designate an instrument in the bass register but was also intended as a trademark and as a reference to the inventor, perhaps Jacomo Bassano; one only needs to change one letter and *Bassano* becomes *Bassono*. Two observations support this thesis: firstly, around 1582 Santo Bassano (Griti) named his invention *Bassanello*, alluding to his chosen surname.[13] Secondly, in Spain, where the dulcian became popular early on, the instrument was consistently named *bajon* or similar, after the Italian *bassono.* As early as 1562, Melchor de Canzer is listed as playing *baxón* at the court of Philip II in Madrid.[14]

But what does *Dolcian* or *Dulzian* mean, and where and when was the instrument so named? Extensive comparisons of written sources, such as inventories, accounts, etc. at German-speaking courts, churches and monasteries of the 16th and 17th centuries, indicate that a great deal of effort was made to avoid confusion. This explains why the Italian term *bassono* was not adopted in German-speaking countries; it is too similar to the German *bassun*, one of the possible names for the trombone. The term *dolcian* or *dulcian,* mentioned by Praetorius and adopted by numerous authors after him, and so called "perhaps because of their sweetness"[15], is not found at all in literary sources before 1615, the year of publication of the first part of his *Syntagma musicum*, and only sporadically in archive materials. In Stuttgart, a *Dulcin* is mentioned in 1571[16], as well as in Nuremberg in 1575[17], but whether this name actually indicates a *Fagotto* or perhaps a *Dolzaina,* – a name somewhat

13 Eleanor Selfridge-Field, "Venetian Instrumentalists in England: A Bassano Chronicle (1538–1660)", in: *Studi musicali* 8 (1979), 175.

14 Maria Antonia Virgili Blanquet, "La capilla musical de Felipe II en 1562", in: *Nassare. Revista Aragonesa de Musicologica* 4 (1988), 278.

15 Praetorius, *Syntagma* II (see n. 1), 27 (recte: 38). "Daher sie dann / villeicht wegen ihrer Liebligkeit / Dolcianen quasi Dulcisonantes genennet werden".

16 Quoted from: Gustav Bossert, "Die Hofkantorei unter Herzog Christoph (1550–1568)", in: *Württembergische Vierteljahreshefte für Landesgeschichte*, Neue Folge XII, Stuttgart 1898, 153.

17 Quoted from: Ekkehart Nickel, *Der Holzblasinstrumentenbau in der Freien Reichsstadt Nürnberg,* Munich: Katzbichler 1971 (Schriften zur Musik Band 8), 338.

shrouded in mystery today but surprisingly widespread in the 16th century – cannot be answered unequivocally. Invoices for the Leipzig town pipers mention "a Dulzana" (7 June 1572), "2 Dulzan" (17 October 1579), "1 Dulzan" (12 August 1587) and '4 reeds to the dulcians' ("4 Röhr zu den Dulcianen") (26 March 1597).[18] We also find the name *Dulzan* in the second stanza of the five-part song "Frisch auf, du edle Musikkunst" in Johann Hermann Schein's *Venus Kräntzlein,* published in Leipzig in 1609. The fact that these Leipzig examples are referring to the bassoon may be proven by an interesting letter of 17 April 1577 from Andreas Sievers, "[…] trombonist along with other colleagues, who are town trumpet players in Bremen", to the Leipzig town piper and instrument maker Conrad Rude, in which he asks him to send "a good dulcian, which is in good repair, trusting that it will be done properly".[19] In any case it is clear that, to avoid possible confusion, the name *Dulzian* was only used for *Fagotto* at courts or churches that did not have *dolzaines* or *dulzaines*. This was not, however, the case at the courts of Graz and Innsbruck, in Munich, with the Fugger family in Augsburg, or in the large and wealthy monasteries such as Kremsmünster. The term *Dulzian* or similar was practically unknown in southern Germany and Austria. It was only on 4 January 1706 that Georg Reutter the Elder (1656–1738) drew up an inventory of musical instruments for the Viennese court orchestra[20], which lists, among other items, "Nine dulcians, like the fagotti of rare black wood, red and inlaid with white bone, with ornaments, and reeds".[21]

18 Rudolf Wustmann, *Musikgeschichte Leipzigs bis zur Mitte des 17. Jahrhunderts* (= Vol. 1), Leipzig and Berlin: Kistner & Sigel 1909, 161.

19 Quoted from: Amalie Arnheim, "Aus dem Bremer Musikleben im 17. Jahrhundert", in: *Sammelbände der Internationalen Musikgesellschaft* 12 (1911), 378. "Bassunist [= Posaunist] sambt andern seinen Mitgesellen, Rathstrummeter zu Bremen",/"a guhten Dulcian, so auff guhten gelawen rechtschaffen zugerichtet […]".

20 *Inventario De'Instrumenti Musicali, che si ritrovano nella camera Musicale di S[ua] M[aestà] Ces[area] Anno 1706* (Vienna, ÖNB, Ser. Nov. 1603).

21 Quoted from Susanne and Theophil Antonicek, "Drei Dokumente zu Musik und Theater unter Kaiser Joseph I", in: Manfred Angerer et al. (eds.), *Festschrift Othmar Wessely zum 60. Geburtstag,* Tutzing: Schneider 1982, 11–37; see also: Gerhard Stradner, "Die Blasinstrumente in einem Inventar der Wiener Hofkapelle von 1706", in: *Studien zur Musikwissenschaft* 38 (1987), 53–63. "Nove Dolcini, come li fagoti di legno Negr'oscuro, rosse ed incastrati di osso bianco, con suoi adornamenti, e Cane".

Continuing with Praetorius: "Otherwise, some think that these are the right Dolcians, which are called Zingel Korthol by the English".[22] He clearly means the tenor dulcian in C, as can be seen from the table showing the ranges, and from Plate X of the *Theatrum instrumentorum.* It is also interesting to note that many consider the instrument in C to be the reference size. Praetorius himself is clearly guided by Lodovico Zacconi, who, in *Libro Quarto of* his *Prattica musica,*[23] refers to the bass instruments. In the third part of his *Syntagma musicum,* Praetorius writes: "Or one can use a Zingelcorthol and Discant Fagott, although these" – and here he probably means the alto dulcian – "are seldom found purely pitched and properly tuned".[24] With respect to the *Zingelcorthol*, it is noted in a well-known later English source, namely the handwritten records of Randle Holmes' *Academy of Armony* from just before 1688 that: "A double curtall is double the bigness of the other, and in play is 8 notes deeper than the single one".[25] In 1770, John Hoyle made a similar comment about the bassoon: "as big again as the Fagottino".[26] In both cases it is not a tenor but an alto instrument that is being described.

In an inventory of the Graz court chapel of 4 June 1577[27], "a whole ensemble of old plain bassoons, including two bass, three tenor and two descant …", are listed in addition to "a good bassoon, to be used daily." This entry is re-

22 Michael Praetorius, *Syntagma* II (see n. 1), 27 (recte 38). "Sonsten wollen etliche / daß diß die rechte Dolcianen seyn / die von den Engelländern Zingel Korthol genennet werden".

23 Lodovico Zacconi, *Prattica di Musica,* Venice 1592/96, fol. 118^{v}.

24 Michael Praetorius, *Syntagma musicum. Tomus Tertius*, Wolfenbüttel: Elias Holwein 1619, 160. "Oder man kann ein Zingelcorthol und DiskantFagott / wiewol dieselben selten rein intonirt vnd recht gestimmet befunden werden / darzu gebrauchen".

25 GB-Lbl Harlean MS. 2034f: Randle Holme III, *Academy of Armory*, before 1688.

26 John Hoyle, *A complete dictionary of music. Containing a full and clear explanation, divested of technical phrases, of all the words and terms, English, Italian, &c. made use of in that science,* London 1770, 45.

27 *Verzaichnis Irer Frl: Dur: etc. Instrumenten, Trometten vnnd Gesanng Püecher, auch was darzue gehörig, so ich durch Merten Camerlannder den vierten Junij im Siebentundsiebenzigisten Jar, auch aines Thayls hernach, höchsternenter Irer Frl: Drht: Öbristen Musico Siman Gatto einantwortten vnd vbergeben hab lassen.* (Hofakten des Ministeriums des Innern I C 4, Kart. 5, fol. 20–21 in Vienna, Haus-, Hof- und Staatsarchiv); quoted from the original, see also: Hellmut Federhofer, *Musikpflege und Musiker am Grazer Habsburgerhof der Erzherzöge Karl und Ferdinand von Innerösterreich (1564–1619)*, Mainz: Schott 1967,

markable in several respects. On the one hand we have a very rare reference to daily (!) use, and on the other hand the designation 'old', which suggests that these instruments were made around the middle of the century. It is likely that the organist at San Marco in Venice, Annibale Padovano (1527–1575), *Musicus* from 1565 and *obrister Musicus* in Graz from 1567 at the latest, had procured them in Venice at the beginning of 1566, in addition to other instruments, on the orders of Archduke Charles II of Inner Austria. The imperial orator in Venice, Baron Franz von Thurn, lent him a hundred and seventy crowns for the "purchase of several instruments".[28] "Schlecht" likely doesn't mean "bad" but "plain", i. e., without ornamentation. It is also interesting to note the precise indication of the registers of the voices. This is the first mention of a complete set of ranges ("copia") of dulcians. The "two descant" would be understood in newer terminology as instruments in the alto register, but they were probably dulcians in d, i. e. lying a fifth above the tenor, which – as can be seen in an illustration in the handwritten compendium *Instrumentälischer Bettlermantl* – were called *discant* in the south of Germany and in Austria.[29] After the Archduke's death in 1590, all instruments and musical materials acquired after 1577 were added to the list. Thus, in the addendum dated 1 November 1590, one finds "a big bassoon, a fifth lower" ("Ain groß fagat, ain Quint niderer"). This is the earliest reference to the existence of a great bass dulcian. Therefore, even before the five-year interregnum after 1590, the Graz court chapel had a complete dulcian consort in fifths (presumably F', C, G, d).

The first printed mention of the dulcian is also closely linked to the Graz court chapel. Lodovico Zacconi (1555–1627), a tenor singer at the Graz court from 1585 to 1590, describes the instrument in his extensive *Prattica di Musica,* which he was only able to write on the basis of musical knowledge he had acquired through contact with the Graz court musicians Simone Gatto, France-

282. "ain ganze Copia alte schlechte fagati, darunder zween Baß, drey Tenor und zween discant" / "Ain guetter fagato, welcher täglich gebraucht wierdt."

28 HKR 1566 Bd 2b, fol. 143; quoted from: Federhofer, *Musikpflege* (see n. 27), 106. "[…] zu erkhauffung etlicher Instrument hundert vnd sibenzig Cronen fürgestreckt".

29 Anonymus A. S.P., *Instrumentälischer Bettlermantl. Darinn in die dreissig Instrumenta mit etwas Unterricht ihren gebrauchs Zusamben getragner sein*, ca. 1645/50, Edinburgh University Library Ms. 319, 128.

sco Rovigo and Annibale Perini.[30] In the first part, printed in Venice in 1592, which he originally intended to dedicate to Archduke Charles II, he reports: "It is called chorist bassoon because there is another one not tuned in the same way, but slightly higher or lower".[31] Lyndesey Langwill's interpretation of this passage: "He is referring to the doppel fagott a fourth lower (G,), or a fifth lower (F,), and to the piccolo fagott, a fifth higher (G), which are Nos. 1, 2 and 4 in Praetorius' table",[32] has been adopted uncritically in the relevant literature. It's much more likely, however, that Zacconi, who does not refer to the family groupings of other instruments when describing them, means three different pitches, each differing by a semitone. *Fagotto chorista*, unlike Praetorius' *Chorist Fagott* about a quarter of a century later, refers to a dulcian at Chorton. In 1782, Philipp Jacob Flathe wrote: "strumento corista, an instrument that has a chorus pitch".[33]

In 1594 dulcians were also to be found at the Protestant collegiate church in Graz. In an inventory drawn up by the collegiate preacher Balthasar Fischer, "24 large and small instruments" are also listed as "a large cudgel [stick], two smaller cudgels [or sticks], a bassoon [fagottino?], of which the brass bocal is lost".[34] Here we encounter for the first time the term *prigel* [= Prügel, engl.: cudgel], a somewhat clumsy German or Austrian translation of the usual Italian *fagotto*. In 1607, "a big bassoon or stick [cudgel] with a leather bag", is described in Innsbruck, clearly referring to a bass-sized dulcian.[35] Accordingly, the Graz instruments are probably one bass, two tenor and one alto or treble dulcian.

30 Hermann Kretzschmar, "Lodovico Zacconis Leben auf Grund seiner Autobiographie", in: *Jahrbuch der Musikbibliothek Peters für 1910*, Leipzig 1911, 53.

31 Lodovico Zacconi, *Prattica di Musica,* Venice 1592/96, fol. 118r. "Si dice Fagotto chorista perche ve n' è vn' altro che non è del suo tuono, ma vn poco piu alto over piu basso".

32 Lyndesey G. Langwill, *The Bassoon and Contrabassoon*, London: Benn 1965, 112.

33 Philipp Jacob Flathe, *Deutsch=Italienisches Wörterbuch*, Leipzig 1782, 688. "Strumento corista, ein Instrument, das den Chorton hat".

34 Graz, Landesarchiv, ständisches Archiv, Protestantika, Fasc. 90 (organists), fol. 2; quoted from: Hellmut Federhofer, "Annibale Perini", in: *Die Musikforschung 7* (1954), 408. "24 gross vnd khlein Instrumenta" / "Ain grosse Prigel, zween kliener Prigel, ain Fagotin, ist das Mundtror von Meßing daruon verlohrn".

35 "Ain grosßer fagot oder prügel mit einem lederen sackh".

The earliest instrumentation with a dulcian clearly in the tenor or alto register can be seen in the instruction "Con basoncico alias fagotto piccolo", which appears in the *altus secundus chorus* part of the double-chorus psalm *Laudate pueri* in Giovanni Pietro Flaccomio's (ca. 1565–1617) collection *Liber primus concentus in duos distincti choros,* published in Venice in 1611 by Angelo Gardano & Fratelli. This is the only Italian source found to date describing the use of a high-pitched dulcian. The entries "2 Fagottini da fiato" in the inventory of musical instruments of the Accademia Filarmonica di Verona of 1628, and "Vn fagottino di busso"[36] in the inventories of 1640 and 1659, probably refer to the two Doppioni kept in the Museo Civico in Verona, as Albert Reimann already asserted in 1957.[37] Incidentally, these instruments also have a double bore.

There is a part, notated in baritone clef (F3) and probably intended for a tenor dulcian, in a choir book prepared by the Graz court singer and copyist Georg Kugelmann (died between 1613 and 1616). This volume is from the collection of the chapel of Archduke Ferdinand (from 1619 Emperor Ferdinand II), which had moved to Vienna; the part in question appears at the beginning of the *bassus* part of the Chorus Secundus of the *Missa Dominus regnavit* a 16, composed by Lambert de Sayve (1549–1614) for the coronation of Emperor Matthias in 1612.[38]

In 1613 Christoph Strauß (Straus) (1575–1631), who was also present at the 1612 coronation in Frankfurt, had the *Liber primus* of his large collection of motets *Nova ac diversimoda sacrarum cantionum compositio* printed by Johannes Fidler in Vienna. The nine-part motet *Gabriel Angelus* (no. 32) specifies a "Faggot: pic[colo]" for the "Octava vox", notated in baritone clef (F3). In the twenty-part *Missa Spiritus Sancti* from Strauß' collection *Missae Christophori Strav,* published by Matthäus Formica in Vienna in 1631, there is also the note "Faggot: pic: ó Tromb: & Voce".

36 Probably *bosso*, i. e., boxwood, is meant here.

37 Verona, Museo Civico, inv. no. 13.288 and 13.289; Albert Reimann, *Studien zur Geschichte des Fagotts. Das "Phagotum" des Afranius Albonesii und zwei "Fagotti" in Verona. Geschichte der Namen für das Fagott*, Diss. Freiburg i. Br. 1957, 62–68 and Kirnbauer (see n. 10), 4.

38 Österreichische Nationalbibliothek Wien (A-Wn), Mus.Hs. 16702/II, fol. 76^{r}.

In the inventory of the Innsbruck court chapel, which was compiled in 1596 after the death of Archduke Ferdinand, "8 sordunes with their cases, which are: 2 basses, 3 tenors, 2 trebles and a smaller treble" are listed.[39] In the 1665 inventory, however, they are called "A whole family of seven identically built small and larger bassoons, each of which has six brass keys [literally: brass fingerings]".[40] These instruments have a mostly cylindrical and rather narrow bore (like the Dolzaina), but double (like the Dulzian). The deep-sounding sordunes, which react acoustically like a stopped organ pipe, cannot be overblown, but have extension keys which expand their range lower and higher, and thereby achieve a range of an octave and a small seventh. Their designation as bassoons is hardly surprising if one reads Michael Praetorius, who writes about the sordune: "Sordun (Italis Sordoni, some call it Dolzianen) is almost equal in resonance to the Cornamuses or soft crumhorns."[41] The four 'Innsbruck' instruments, two great basses in C' and two basses in F and G, which have been preserved in the collection of early musical instruments at the Kunsthistorisches Museum in Vienna, as well as another instrument in Rome,[42] differ in their construction from those described by Praetorius however.

The motet *Benedicam Dominum* from the large collection *Apparatus musicus sacrarum cantionum concertantium* by Johann Stadlmayr (ca. 1575–1648), published by Michael Wagner in Innsbruck in 1645, calls for five low instruments in addition to two tenor or soprano parts. These are indicated as "Viola, Fagotto ò Trombon", notated in baritone clef (F3) for the top voice, "Viola,

39 *Inventari weilend der fürstlich durchlaucht erzherzog Ferdinanden zu Österreich etc. lobseligster gedechtnus varnuszen und mobilien*, fol. 229^{v}–230^{v}; quoted from Wendelin Boeheim [ed.], "Urkunden und Regesten aus der k. k. Hofbibliothek", in: *Jahrbuch der Kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses*, vol. 7, Vienna 1888, CCLVII. "Sordani, 8 stuckh, mit iren fueteralen, als 2 pasz, 3 tenor; 2 discant und ain clainerer discant".

40 See Franz Waldner, "Zwei Inventarien aus dem XVI. und XVII. Jahrhundert über hinterlassene Musikinstrumente und Musikalien am Innsbrucker Hofe", in: *Studien zur Musikwissenschaft* 4 (1916), 132–133. "Ain ganz Stimwerkh von 7 gleichgemachten cleinen vnnd grösseren Fagötten, deren jeder mit 6. Messing griffen".

41 Michael Praetorius, *Syntagma* II (see n. 1), 39. "Sordun (Italis Sordoni, etliche nennen es Dolzianen) ist am Resonantz fast den CornaMusen oder stillen Krumbhörnern gleich".

42 Rome, Museo degli strumenti musicali, Sign. 705; see: Luisa Cervelli, *La Galleria Armonica. Catalogo del Museo degli strumenti musicali di Roma*, Rome: Istituto poligrafico e Zecca dello Stato 1994, 249–250.

Trombon ò Fagotto" for the second and third voices, and "Violon ò Fagotto", in sub-bass clef (F5), for the two lowest. It is probable that Stadlmayr was thinking of an instrumentation with five sordunes.[43]

The first references to dulcians in Innsbruck can be found during the reign (from 1602) of Maximilian III, who had already established a chapel in 1585 at his residence in Mergentheim, shortly after his appointment as Grand Master of the German Order. In a recently-discovered inventory from the archives of this Deutschmeisterorden, probably compiled in 1607 on the occasion of the transfer of the post of Court Kapellmeister from Johannes de Fossa (?–1611) to Johann Stadlmayr, one of the items listed is "a big bassoon or cudgel with a leather bag", as mentioned above.[44] Additionally, in 1613 Maximilian's governor in Mergentheim, Johann Eustach von Westernach (1545–1627), sent a large collection of musical instruments to Innsbruck, which included "two single bassoons" ("Zwen einfache fagöt"),[45] a designation that is probably synonymous with the *Zingel Korthol* in Praetorius. So these are clearly the two tenor dulcians that are also listed in the chapel inventory of 1655. It is likely that a very interesting *Canzon A 2 Tenori*, No. 22, from the *Canzoni fantasie e correnti da suonar a 1, 2, 3, 4 voci con Basso Continuo* by the Spanish bassoonist Bartolomeo de Selma y Salaverde (ca. 1595–after 1638), printed by Pietro Magni in Venice, relates to the instruments mentioned above. From 1628 to 1630 Selma was employed at the Innsbruck court chapel, and eight years later still proudly referred to himself as "Musico & Suonator di Fagotto DELL' ALTEZZA SER. DI LEOPOLDO Archiduca d'Austria di Felice memoria & d'altri Prencipi & c.". The Canzona No. 38 for soprano, tenor, bass instruments and basso continuo, whose two lower concertante parts can be successfully played with tenor and bass dulcians, also deserves mention. Tenor dulcians are also used in four-, six-, eight- and fourteen-part instrumental canzonas, as well as in several motets with large instrumentation. They can be found as well in Johann Stadlmayr's

43 See: Klaus Hubmann, "'Nit a iedem wohl pekant' – Der Dulzian in Österreich", in: Klaus Aringer and Bernhard Rainer (eds.), *Musik in Österreich von 1564 bis 1740*, Graz: Leykam 2022 (Neue Beiträge zur Aufführungspraxis 9), 186–188.

44 See n. 34.

45 "Dan ist durch herrn von Westernachs stathaltern anno 1613 von Mergentheim alhero nacher Insprugh überschickht worden"; friendly communication from Franz Gratl, Innsbruck.

Apparatus musicus, designated there as *Fagottino* and notated in tenor clef (C4), and also in the five-part motets *O beatum virum Martinum* (4th Chorus: *Altus & 5 Fagotti*) and *Vox caelestis* (1st Chorus: *2 Corn[etti]. 1 Trombone. o Fagottino*), from the collection *Ara musica solemni concertu ad veram et veteram formam redacta* by Stadlmayr's pupil Abraham Megerle (1607–1680), which unfortunately survives only in fragments.[46]

Very early on, as early as 1589 or the following year, there were "5 bassoons, including 4 tenors" ("5 Vagoten, darunter 4 Tenor") in the Stuttgart court chapel. These instruments may have been a bass, three tenors and an alto in d. The inventory of 1589, with additions up to 1594, specifies: "1 bassoon, which is a treble, sent back to Breslau [today: Wrocław, PL] to be completed", apparently because something was missing or broken off, with a note added in the margin: "not been sent back after the agreed time. 1 small bassoon, which is a tenor, decorated with brass, made by the Dutchman Melchior Billigkheim". It also includes a further entry: "Two small bassoons made by Daniel Schorndorfer in the year [15]90".[47]

On 24 February 1613, the Kassel Kapellmeister George Otto (1550–1618) made an inventory of the musical materials and instruments in the possession of Landgraf Moritz of Hesse-Kassel, which includes, among other things, "a small bassoon in C as well as a very small bassoon", which must have been a tenor and an alto dulcian. Maggie Kilbey proposes that Heinrich Schütz acquired a considerable number of instruments for Moritz Landgraf of Hesse, among them *bassoons* and *bassanelli*, during his first stay in Venice.[48] In any

46 The information on instrumentation is taken from the "Partitura" part book in München, Bayerische Staatsbibliothek (D-Mbs), sign. 2 Mus. pr. 333.

47 Quoted from: Gustav Bossert, "Die Hofkapelle unter Eberhard III.; Beilage Nr. 2: Katalog der Bibliothek der Hofkapelle von 1589, Inventarium instrumentorum musicorum in anno 1589", in: *Württembergische Vierteljahreshefte für Landesgeschichte*, Neue Folge 21 (1912), 134. "1 Vagot, so 1 Discant ist, gen Preßlaw widerumben zu ergänzen geschickt" / "nach der Zeit nit wieder geschickt. 1 kleiner Vagot, so ein Tenor mit Meß beschlagen, den Melchior Billigkheim der Niederländer verfertigt" / "2 kleine Vagoten, so Daniel Schorndorfer in ao. 90 verfertigt".

48 Maggie Kilbey, *Curtal, Dulcian, Bajón: A History of the Precursor to the Bassoon,* St. Albans: M. Kilbey 2002, 17. "Ein kleiner Fagott ins C sowie Ein gar kleiner Fagott".

case, Schütz must have been familiar with *bassoons* in various sizes. A very instructive example appears in his two-part motet *In lectulo per noctes – Invenerunt me custodes civitatis* (SWV 272/273), from the *Symphoniae sacrae,* published in Venice in 1629, which includes a three-part dulcian consort consisting of a tenor and two basses.

An anonymous *Sonata à 8. 4 Viole & 4. Fagotti*, attributed to Clemens Thieme (1631–1668), probably written around 1650 and to be found in Kassel,[49] features alto, tenor, bass and quint bass dulcians. This work most likely relates to the dulcians of the Kassel Court Chapel.

In 1643 Thomas Selle (1599–1663) featured two tenor dulcians as accompanying instruments to the Evangelist part in his *Passion 2dum Johannem.*[50]

Andreas Unger (ca. 1605–1657), cantor at the Wenzelskirche in Naumburg an der Saale, bequeathed 53 wind and 10 string instruments to his church in 1657. Among these were two alto, four tenor and two bass dulcians, all of which have been preserved, with the exception of one alto instrument which was lost during the Second World War. They are now in the Musikinstrumenten-Museum of the Staatliches Institut für Musikforschung Preußischer Kulturbesitz in Berlin. Also from Unger's private library[51] came a copy of a "Concert à 21 Schützens. Domini est terra ex g",[52] held in the Universitätsbibliothek of Königsberg (present-day Kaliningrad), with the shelfmark 13609 (3), but unfortunately lost during the Second World War. This is probably an authentic Schütz arrangement (SWV 476) of No. 39, "Domini est terra. Concert: à 16. 8 vocibus è 8 Instrumentis. Pro Ascensione Domini vel omni tempore" (Psalm 24) from Johann Stadlmayr's *Apparatus musicus of* 1645, with

49 D-Kl, sign. 2° Ms. Mus. 60f; See: Clytus Gottwald, *Die Handschriften der Gesamthochschulbibliothek Kassel, Landesbibliothek und Murhardsche Bibliothek der Stadt Kassel*, Wiesbaden: Harrassowitz 1997 (Manuscripta musica 6), 171.

50 Thomas Selle, *Opera omnia*, Staats- und Universitätsbibliothek Carl von Ossietzky, Hamburg (D-Hs), sign. Scrin. 251.

51 Arno Werner, "Die alte Musikbibliothek und die Instrumentensammlung an St. Wenzel in Naumburg an der Saale", in: *Archiv für Musikwissenschaft* 8 (1926/27), 413.

52 Joseph Müller, *Die musikalischen Schätze der Königlichen- und Universitätsbibliothek zu Königsberg in Preußen. Aus dem Nachlasse Friedrich August Gottholds,* Bonn 1870; reprint Hildesheim, New York: Olms 1971, 326.

the addition of a five-part dulcian consort consisting of an alto, two tenors, a bass and a great bass (in low F').

In the *Neu=gepflantzten Thüringischen Lust=Gartens Ander Theil* by Johann Rudolph Ahle, published in 1658 by Johann Hüter in Mühlhausen, appears the highly interesting Christmas cantata, No. XXVIII, *Fürchtet euch nicht,* for eight voices, four dulcians (alto, tenor, tenor, bass) and basso continuo.

On three cover pages of a copy of Johann Kuhnau's cantata *Gott sei mir gnädig nach deiner Güte,* from the collection of the Fürstenschule Grimma[53] made around 1705, the fagottino part of an anonymous *Sonata à 4* with the movements *Adagio–Allegro–Adagio, Allemand, Courand, Gavott, Saraband* and *Gigue* has been preserved. Judging by the writing and the musical style, this work, which unfortunately has only survived in fragments, probably dates from the last quarter of the 17th century and must therefore be regarded – at least for the time being – as the last known composition from the German-speaking region to include a solo tenor dulcian.

Admittedly, for about a century from the last quarter of the 16th century, dulcians in the tenor or alto register were only to be found in relatively few chapels of wealthy courts and churches. The fact that they nevertheless attracted the interest of renowned composers, from Lambert de Sayve to Johann Stadlmayr, and Thomas Selle to Heinrich Schütz, speaks to the fascination held by the smaller siblings of what was probably the most successful double-reed instrument of the 17th century.

53 Today in: Sächsische Landesbibliothek – Staats- und Universitätsbibliothek Dresden (D-Dl), sign. Mus.2133-E-507.

Bassoons Come in all Sizes: A Typology of Fagottini

Áurea Domínguez

Changes to the morphology of small-sized bassoons in the 18th and 19th centuries were closely intertwined with those of their full-sized counterparts. These small instruments were developed and built by prominent woodwind manufacturers across Europe, including Denner, Grenser, and Savary. Various national characteristics in craftsmanship emerged, resulting in the development of three distinct types, each tuned to different pitches. This article explores the history of small-sized bassoons, namely the fagottino, tuned an octave higher, and the tenoroon, tuned either a fifth or a fourth higher, spanning from the early 18th century to the present day.[1] Organological descriptions of the different models are drawn from examinations of surviving instruments held in museums and private collections all over the world. This survey of the history of small bassoons aims to contribute to a greater understanding of bassoon manufacturing history, specifically during the period from the early 18th to the early 20th centuries, a period in which significant changes in bassoon construction took place.

Figure 1 depicts bassoons side-by-side, showing the complexity and variety of sizes, and the relationship between different models and sizes. From top to bottom, the instruments shown are: an instrument in C tuned at the octave (with a total length of just 60 cm), one in G tuned a fifth higher, an instrument in F tuned at the fourth, a full-sized bassoon, and a contrabassoon. These are the most common, although some historical references to instruments tuned in E-flat exist. It is unclear, however, if any have survived.

1 In this article, the term "fagottino" refers to all types of transposing small bassoons, as well as to models that sound an octave higher than the bassoon. Instruments pitched a fifth or fourth higher are referred to as tenoroons in G or F. The instruments studied by the research team have been catalogued, with each instrument assigned an index number beginning with the letters FT (Fagottino/Tenoroon).

Fig. 1: Bassoons built in different sizes. From top to bottom: 3D-printed octave fagottino after FT30 Scherer, FT6 Anonymous Austrian tenoroon in G, copy after FT42 Savary jeune tenoroon in F, Baroque bassoon after Wietfelt by Pau Orriols, and Baroque contrabassoon after Eichentopf by Guntrum Wolf. Photo: Áurea Domínguez.

The oldest surviving fagottini

The fagottino and tenoroon possess a rich and intricate history, which is evident from the large number of existing instruments and the range of variation observed among them. The oldest surviving small bassoons were built at the end of the 17th century. In the earliest stage of fagottino construction, dating from ca. 1680 to around 1780, we find that around thirty instruments have survived, which is a relatively large number considering their age.

Table 1 shows a list of instruments and their makers that have survived from this early period. It is an excerpt from the full catalogue of small bassoons compiled by the fagottino research team from 2017 to 2023, which is available online.[2] Table 1 provides also a general overview of the regions in which these early instruments were made, as well as some basic details of their construction, such as the number of keys and transposition size. It shows that most of these 18th-century small bassoons are octave instruments, although some tenoroons in G were also made during the 18th century. As was the case with full-sized bassoons in the first half of the 18th century, small-sized bassoons of this period had three or four keys. Many of these octave fagottini were built in Germany by makers such as Johann Christoph Denner, who was active

2 "Instrument Catalogue of Small-sized Bassoons, ca. 1700–ca. 1915" https://doi.org/10.5281/zenodo.13909393 (10 October 2024), also included in this volume.

Table 1: List of surviving small bassoons manufactured 1680–1780.

MAKER	INSTRUMENTS	PROVENANCE	DATE
Anonymous	Four instruments: 3–4-key fagottini. FT4/7/40/65	Diverse	ca. 1730–1770
Denner	3-key fagottino. FT14	Nuremberg	ca. 1700
Eichentopf	3-key fagottino. FT81	Germany	ca. 1740
Schramme	3-key fagottino. FT118	Germany	ca. 1700–1740
Scherer	Six instruments: 4–5-key fagottini. FT28/29/30/39/44/115	Butzbach	ca. 1750–1778
Kraus	Five instruments: 3–4-key tenoroon in G. FT18/91/92/93/ 94	Germany	ca. 1750–1790
Kuteruf	3-key fagottino. FT59	Germany	ca. 1700–1760
Grenser, A.	4-key fagottino. FT86	Dresden	ca. 1744–1798
Müller	4-key fagottino. FT20	Germany	ca. 1770
Schlegel	4-key fagottino. FT116	Basel	ca. 1752–1792
Rottenburgh	Three instruments: 4-key fagottino. FT23/107/108	Brussels	ca. 1760
Le Breton	Reference to a "counter-tenor bassoon". FT97	Paris	ca. 1692
Lot, M.	Two instruments: 3–5-key fagottini. FT98/99	Paris	ca. 1743–1785
Prudent	Fagottino. FT106	Paris	ca. 1765–1783
Collings	3-key fagottino. FT78	UK	ca. 1771–1773

in Nuremberg from the late 17th century to the mid-18th century, or by Johann Heinrich Eichentopf, who worked in Leipzig around the same time.[3] Besides other anonymous instruments sharing the same characteristics, some lesser-known makers also built small bassoons, including J. Kuteruf and Müller.[4]

The production of woodwind instruments in the 18th century was frequently centralised in large workshops where numerous artisans produced a variety of instruments and instrument parts at the same time. In many cases, these workshops continued for generations as family businesses with the same

3 Phillip T. Young, *4900 Historical Woodwind Instruments: An Inventory of 200 Makers in International Collections*, London: Tony Bingham 1993, 69.

4 Ibid., 274.

name, like two of the most prolific fagottino makers of the 18th century, Scherer and I. Kraus. These two workshops were among the largest of the 18th-century woodwind instrument family companies operating in Germany and, although they were both active for several generations, not much is known about them.

The family-operated Kraus workshop made several tenor instruments in G. The five surviving instruments are two 3-key tenoroons and three 4-key tenoroons, which are held today in museums in Japan, Munich, Eisenach, Salzburg, and Paris.[5] There is a relatively small body of research about the Kraus family and instrument-building workshop. In 1986 Herbert Heyde published a comprehensive study of the Kraus tenoroon located in Eisenach, in which he noted Kraus' use of some specific measurement units, which at the time were used only in Switzerland and in the neighbouring area of Baden. Based on this discovery, one can surmise that there was a connection between Kraus and "Pfeifenmacher Kraus", a late 17th-century maker working in Liechtenstein mentioned by Fridericus Friesius in his 1708 *Der vornehmen Künstler und Handwercker Ceremonial-Politica*.[6]

The other large family workshop making numerous small bassoons in the 18th century was Scherer. Five small octave fagottini have survived in museums and private collections in Paris, Brussels, Leipzig, Kassel, UK, and Zurich.[7] As in the case of Kraus, not much is known about Scherer's family workshop, or about its activity as instrument builders. The most detailed study of this workshop was published in 1986 by Phillip Young, in an article entitled "The Scherers of Butzbach". According to Young, the workshop was founded by Johannes Scherer (1664–1772) and was passed on to his son Georg Heinrich Scherer

5 The two 3-key Kraus tenoroons are located in the Hamamatsu Museum of Musical Instruments in Japan, and in the Münchner Stadtmuseum – Sammlung Musik. The 4-key tenoroons are in the Salzburg Museum (formerly: Salzburger Museum Carolino Augusteum), the Bachhaus Eisenach, and the Musée de la musique de la Philharmonie de Paris.

6 Herbert Heyde, *Musikinstrumentenbau: 15.–19. Jahrhundert: Kunst, Handwerk, Entwurf*, Wiesbaden: Breitkopf & Härtel 1986, 81.

7 The Scherer instruments are held in the Musée des Instruments de Musique in Brussels, the Musée de la musique in Paris, the Museum für Musikinstrumente der Universität Leipzig, the Museum für Gestaltung in Zurich, the Mollenhauer private collection in Kassel, and the Waterhouse private collection in Wiltshire, UK.

(1703–1778).[8] A noteworthy characteristic of their instruments is that, together with the maker's stamp of a rampant lion, there are often letters such as B, D, G, O, T, and Y stamped on the various joints. The meaning of these letters, which generally differ from joint to joint, is not completely clear. According to Waterhouse, the letters might be the individual identification of sub-contracted workers in the large workshop, which again highlights the potentially significant size and importance of the family business.[9]

Of the small bassoons made by Scherer in the third quarter of the 18th century, five have survived. All are octave instruments with four keys, two on the butt joint and two on the long joint. They are similar in construction, although a closer look reveals some relevant differences, demonstrating how makers of this period were constantly trying to reimagine their instruments. Aside from the most opulent example preserved in the Museum für Gestaltung in Zurich and made of boxwood, the others are made of maple, as is common in full-sized bassoons.[10] The Zurich instrument FT30 also has a fifth key, a double A-flat key placed on the butt joint, allowing the player to play the instrument with interchangeable hand positions. This characteristic, although quite common in other instruments of the time such as oboes, is not frequently found in bassoons. Another instrument made by Scherer is preserved in a private collection formerly owned by William Waterhouse in England.[11] The internal bore of this fagottino FT39 is slightly different than the others. It is built with one single hole covered by a cork in the butt joint, instead of two separate holes with a connection inside the bore. The two-cork feature is more commonly found in German instruments, instead of the one-cork solution seen in French instruments. In addition to this characteristic French style of bore construction, the Scherer FT39 is stamped with a *fleur de lis*, a trait that no other instrument by Scherer possesses.

Aside from those major workshops in the German regions, other 18th-century makers building small bassoons in other parts of Europe also existed. The

8 Phillip T. Young, "The Scherers of Butzbach", in: *The Galpin Society Journal* 39 (1986), 112–124.

9 William Waterhouse, Lyndesay G. Langwill, *The New Langwill Index: A Dictionary of Musical Wind-Instrument Makers and Inventors*, London: T. Bingham 1993, XIX.

10 FT30: 5-key fagottino, Johannes & Georg H. Scherer (4) Butzbach, ca. 1760–1770.

11 FT39: 4-key fagottino, Johannes & Georg H. Scherer (5), Butzbach, ca. 1750–1778.

earliest maker is perhaps Godfridus Adrianus Rottenburgh in Brussels, from whom several very early octave instruments survive.[12] In Paris, some important makers were also building fagottini, including Martin Lot, and Prudent Thierrot, from whom no instrument survives, although a posthumous inventory lists several of his octave bassoons.[13] Furthermore, there is a historical reference to a small bassoon by Abbé Denis de Coetlogon, who in 1745 claimed that "the best bassoon I ever heard was one Le Breton, bassoon of our Lady in Paris, who invented a counter-tenor to the bassoon".[14]

Considering the number of surviving instruments, it seems that the fagottino saw widespread use in Germany during most of the 18th century, although there were seldom specific references to its use in musical scores or other written sources. The question remains as to what role these instruments had, and in which music they were played. One of the main hypotheses is that fagottini replaced other instruments when needed, and reinforced voices in religious music, cantatas, and liturgical offices. This was common practice with other consort-type instruments such as dulcians, which is why it is easy to assume that this role may also have applied to the early 18th-century fagottino. In some rare cases, a direct reference to the fagottino exists, and some scores call for the instrument. This is seen, for instance, in Johann Mattheson's (1681–1764) Christmas Oratorio *Das Große in dem Kleinen,* which includes two arias with obbligato fagottino, "Wenn Satan und Hölle, wenn Sünde und Menschen" and the aria "Aus Liebe", both of which call for "Violette e fagottini all'unisono".[15]

In addition to its likely role in sacred music, there are some indications that fagottini were used to give a special colour and character to particular arias in operatic works. A version of Nicola Porpora's opera *Siface,* published

12 Albert R. Rice, Marlowe A. Sigal, *Four Centuries of Musical Instruments: The Marlowe A. Sigal Collection*, Atglen, PA.: Schiffer Publishing 2015, 171.

13 Young, *4900 Historical Woodwind Instruments* (see n. 3), 149. Jean Jeltsch, "Prudent à Paris: Vie et Carrière d'un Maître Faiseur d'instruments à Vent," in: *Musique-Images-Instruments* 3 (1998), 128–152: 151.

14 James B. Kopp, *The Bassoon*, New Haven and London: Yale University Press 2012, 223.

15 See Stefan Voss, "Die Verwendung der Holzblasinstrumente in Werken Hamburger Opernkomponisten der Barockzeit," in: *Flöte, Oboe, Klarinette und Fagott: Holzblasinstrumente bis zum Ende des 18. Jahrhunderts,* München and Salzburg: Katzbichler 2011, 94–95.

in Rome in 1730, includes an aria with two fagottini in Act III, Scene I.[16] Furthermore, the composer Domenico Cimarosa scores fagotto piccolo in his opera seria *Artemisia regina di Caria*.[17] In both examples, fagottini are only required in one aria. This indicates the composer's preference for using the instrument as an effect, lending a certain character or colour to a particular moment of the composition. It also indicates that the players were probably playing bassoon during the performance, and only switched to the fagottino in the aria where the instrument was required.

The fagottino at the turn of the 19th century

The final quarter of the 18th century was an important period in the history of the bassoon and in its construction. The woodwind instrument-making industry experienced a transformation in parallel to social and philosophical developments during the Industrial and French Revolutions. Around the turn of the 19th century, the morphology of woodwind instruments transformed, in order to achieve a greater range of tone colours, dynamics, chromaticism and range arising from the challenges posed by new compositions. For the bassoon, this development accompanied the changing role of the instrument as it began to play brilliant solos as a member of the orchestral wind section, while still retaining its ability to blend into the basso continuo group. One of the most visible changes in wind instruments was the gradual increase in the number of keys. Makers, often collaborating with performers, introduced new keys to allow for a wider range of possibilities, including the ability to play in all tonalities and execute chromatic passages appearing in new compositions.[18]

The organological changes that wind instruments experienced at the end of the 18th century and the beginning of the next also occurred in small bassoons. There is a strong correlation between the morphology of small bas-

16 Nicola Antonio Porpora, Opera *Siface*, Partial autog., Brussels, Conservatoire royal de Bruxelles, Bibliothèque, 2298 (RISM ID no.: 701001643 – aria Act III, Scene 1).

17 Domenico Cimarosa, Opera seria *Artemisia regina di Caria*, MS copy [without shelf mark], I-Rmassimo (RISM ID no.: 858000056).

18 Áurea Domínguez, "The Romantic bassoon understood by 19th century performers," in: Christian Philipsen (ed.), in Verbindung mit Monika Lustig, *Geschichte, Bauweise und Repertoire des Fagotts,* Michaelstein: Wißner-Verlag 2020, 153–171.

soons and their larger counterparts when studying instruments built in the 19th century. In this respect, small instruments also benefited from the latest innovations and were not left behind in their development.

Table 2 shows instruments that have survived from the period between 1780 and 1810. From their number of keys and the regions where they were built, it is clear that there was an increased interest toward the end of the 18th century among wind instrument makers throughout Europe in building small bassoons and experimenting with different models, just as there was with larger instruments. Approximately the same number of instruments have survived from this 30-year period as from the previous 100 years. In contrast to what is presented in Table 1, whereby most instruments made before 1780 were made in Germany, small bassoons were also built in many other regions around the turn of the 19th century. Octave instruments and tenoroons in G were made in London, Paris, and Vienna by the most relevant makers of the time. Those cities remained significant areas of influence for small bassoons throughout the entire 19th century.

During this period, transposing instruments tuned in G were common, in addition to the octave fagottino that was predominant in the first half of the 18th century. From around 1810 onward, some slightly larger instruments tuned in F began to be made. In the following years, tenoroons in F became the most common small-sized bassoons made in Europe, coexisting with other models and bassoon sizes. Regarding the origin of the idea of tuning tenoroons in F, in addition to the already common instruments in G or an octave higher, it is worthwhile to review references in specialised musical journals from the time. An article written in 1808 by the Paris-based instrument maker Dominique Porthaux describes several attempts to build a wooden bocal for a new instrument of his invention that he called "tenore".[19] Porthaux does not specify whether the instrument he was working on is a bassoon in G or in F, but it is possible that this instrument is a tenoroon in F. In the Musée de la musique in Paris there is a tenoroon in F made by Porthaux, FT21, matching this description, and it could easily correspond to the one referred to in this article.[20] The instrument preserved in Paris can be considered a prototype,

19 Dominique Porthaux, "Instrumens [sic!] a Vent: Avis de MM. Les Artistes et Amateurs de Basson", in: *Journal de Paris*, Dimanche février 1808, 304.

20 FT21: 9-key tenoroon, Dominique Antony Porthaux, Paris, ca. 1808.

as it shows some evidence of modifications and reconstruction in the tone holes, indicating that it might indeed be the instrument he presents as his new invention in the 1808 article.

Table 2: List of surviving small bassoons manufactured 1780–1810.

MAKER	INSTRUMENTS	PROVENANCE	DATE
Anonymous	Six instruments: 4–6-key fagottini and tenoroons. FT4/40/52/63/67/69	Diverse	ca. 1780–1810
Tölcke	Two instruments: 4-key fagottini. FT32/123	Braunschweig	ca. 1780
Eisenbrandt	Tenoroon. FT82	Göttingen	ca. 1785–1822
Grenser, H.	Three instruments: 5–6-key fagottino. FT16/50/87	Dresden	ca. 1796–1713
Castlas	7-key fagottino. FT12	Turin	ca. 1800
Custode	4-key fagottino. FT79	Naples	ca. 1800–1830
Babb	6-key tenoroon in G. FT72	London	ca. 1780
Blockley	Two instruments: 4–6-key tenoroons in G. FT9/73	Leicestershire (UK)	ca. 1760–1798
Cahusac	Two instruments: 4–6-key tenoroons in G. FT11/77	London	ca. 1789
Saxton	4-key tenoroon in G. FT58	Nottingham	ca. 1793–1799
Milhouse	Three instruments: 4–8-key tenoroons in G and fagottino. FT57/101/102	London	ca. 1800
Peale	7-key tenoroon in G. FT104	UK	ca. 1800–1830
Tuerlinckx	Two instruments: 4–5-key fagottino and tenoroon. FT33/34	Mechelen (Belgium)	ca. 1795–1810
Delusse	7-key fagottino. FT13	Paris	ca. 1783
Jacoby	5-key fagottino. FT17	Auch	ca. 1785
Porthaux	9-key tenoroon in F. FT21	Paris	ca. 1808
Savary Pere	5-key tenoroon in G. FT24	Paris	ca. 1810
Proff	5-key tenoroon in G. FT22	Tours	ca. 1800
Bühner & Keller	7-key fagottino. FT56	Strasbourg	ca. 1810
Magvini	8-key tenoroon in F. FT100	Vienna	ca. 1800
Scholl	Fagottino. FT117	Vienna	1803

Tenoroons and fagottini in the first half of the 19th century

After the first tenoroons in F started to be made in France, they became the most common model of small bassoon in the 19th century. Table 3 lists the roughly fifty instruments dating from 1810 to 1850 that have survived in collections and museums. Among those, around 70 % are tenoroons in F, built mostly in France, but also in other regions such as Vienna and London.

The construction of fagottini seems to have been particularly widespread in the first half of the 19th century. Additionally, references and descriptions of small bassoons are common in various publications. Small bassoons are mentioned in dictionaries, and in scholarly references, such as Häuser's *Musikalisches Lexikon* of 1833 and Almenräder's *Fagottschule* of 1843.[21]

Fagottini, and tenoroons in particular, were built throughout Europe at a time when each region had a different key system and specific construction characteristics. Bassoons built in the first half of the 19th century can be considered custom-made when taking their differences in fabrication into account. These differences include the number of keys, morphology of the bore of the instrument, the U-bend, and the shape and conicity of the bell. Fagottini and tenoroons shared these differences with their larger counterparts, as standardisation in bassoon building only developed much later in the 19th century. As the overall number of keys increased (to between fourteen and seventeen by the mid-19th century), fagottini were also being adapted to the German, French, English, and Viennese models and key systems. This makes them especially interesting to study in a morphological sense, as they draw on the organological characteristics of the bassoon during this fascinating period.

Among small bassoon makers, the Paris-based Jean-Nicolas Savary jeune (1781–1853) was one of the most prolific and sophisticated. He pursued the craft of bassoon making that he had learned from his father, establishing his own workshop in 1817. Savary was also a professional bassoonist at the Théâtre Royal Italien. He became known as a respected bassoon maker, introducing numerous changes to the instrument's mechanism and patenting a number of

21 Johann E. Häuser, *Musikalisches Lexikon*, Meissen: Goedsche 1833; Carl Almenräder, *Die Kunst des Fagottblasens*, Mainz: B. Schott Söhne 1843.

Table 3: List of surviving small bassoons manufactured 1810–1850.

MAKER	INSTRUMENTS	PROVENANCE	DATE
Anonymous	Six instruments: 6–10-key tenoroons. FT3/6/46/51/62/66	Diverse	ca. 1810–1850
Schuster	6-key fagottino. FT119	Markneukirchen	ca. 1820
Grenser & Wiesner	6-key fagottino. FT15	Dresden	ca. 1824
Leiberz	7-key fagottino. FT43	Koblenz	ca. 1825–1835
De Rosa	11-key tenoroon in G. FT80	Naples	ca. 1830
Bonaccorsi	7-key fagottino. FT10	Barga (IT)	ca. 1815
Key	Fagottino. FT90	London	ca. 1805–1858
Astor & Horwood	6-key tenoroon in F. FT8	London	ca. 1815
Gerock	Tenoroon. FT84	London	ca. 1804–1837
Pace	9-key tenoroon in F. FT53	London	ca. 1825
Treumann	Tenoroon. FT124	Lyon	ca. 1825–1850
Adler	Three instruments: 11–13-key tenoroons in F. FT1/2/61	Paris	ca. 1835
Savary jeune	Fourteen instruments: 10–16-key tenoroons and fagottino. FT25/26/27/38/42/54/55/60/109/110/111/112/113/114	Paris	ca. 1824–1850
Dupré	0-key unfinished fagottino. FT35	Tournai (Belgium)	ca. 1820–1850
Hirsbrunner	Two instruments: 6–12-key tenoroons in F. FT41/89	Sumiswald (CH)	ca. 1815–1847
Küss	Three instruments: 9–10-key tenoroons in F. FT49/95/96	Vienna	ca. 1810–1839
Tauber	Four instruments: 6–12-key tenoroons in F. FT31/48/121/122	Vienna	ca. 1798–1729
Wussinger	9-key tenoroon. FT125	Klagenfurt	ca. 1810–1841
Merklein	8-key tenoroon in F. FT19	Vienna	ca. 1835
Stehle	12-key tenoroon in F. FT45	Vienna	ca. 1850–1860

his innovations.[22] Performers from across Europe valued his skill, and Savary instruments were played until the late 19th century, with some sources even calling him the "Stradivarius of the bassoon".[23] Savary also produced numerous small bassoons in various sizes, of which at least fourteen can still be found in public and private collections. Most of these instruments are tuned in F, but there is also an octave fagottino from 1827 that is preserved in the Musée de la musique de Paris, as well as at least one instrument in G, dated 1824.[24]

The first half of the 19th century is known for virtuoso performers mastering and pushing the capabilities of their instruments to the outermost limits. Corresponding to this aim of overcoming established boundaries, the fagottino found a role as a virtuoso solo instrument in soirées and small salon concerts. The louder sonority of the tenor register, and the range of the tenoroon in F, allowed skilled players to astonish their listeners. Newspaper articles mention musicians playing arrangements as well as their own improvisations on small bassoons; almost no music has survived or was ever printed, however. According to Constant Pierre, the Paris Conservatoire professor Eugène Jancourt regularly performed with a tenor bassoon in the Paris salon of the Mercié et Soufleto piano factory.[25] There are no references to what music Jancourt or other virtuoso players may have performed at these soirees; they may have improvised or played their own unpublished compositions. There are, however, a few published musical scores written for the fagottino as a solo instrument, *Tema con Variazioni per Fagottino* by Egisto Mosell (1787–1852), for example.

Another advantage of the tenoroon in F was that it had the same transposition as the cor anglais, another double reed instrument, and could therefore be used as a substitute in orchestras or bands. This was the case at the opera in

22 Áurea Domínguez, "Fagottini in the Philharmonie de Paris: Researching the largest collection of small-sized bassoons", in: *Glareana* 68/2 (2019), 6–19: 7.

23 For detailed information about his activities see the article by James Kopp in this volume.

24 The fagottino FT25: 13-key fagottino, Jean-Nicholas Savary Jeune (2), Paris,1827 is in the Musée de la musique in Paris and the tenoroon in G FT60: 11-key tenoroon, Jean-Nicholas Savary Jeune (14), Paris, 1824 is in a private collection in Italy.

25 Constant Pierre, *La facture instrumentale à l'Exposition de 1889: notes d'un musicien sur les instruments à souffle humain nouveaux et perfectionnés*, Paris: Librairie de l'art indépendant 1889, 25–26.

Bordeaux from 1833 until at least 1889, where it was common practice for bassoon players such as Espaignet to play the cor anglais part on a bassoon in F, as described by Constant Pierre.[26]

Meanwhile, in early 19th-century Germany, the Harmoniemusik wind ensemble tradition, which continued in some cities for several decades into the 19th century, also incorporated bassoons of different sizes when they were available, such as the tenoroon and octave instruments. One of the most significant compositions of this genre was the *Parthia No. 4* for two fagottini, two tenoroons in F, two bassoons, and two horns by Johann Georg Michael Frost.

Fagottini in the second half of the 19th century

As the 19th century progressed, interest in small bassoons diminished and the second half of the century saw a sharp decline in the manufacture of fagottini.

As Table 4 shows, only a dozen instruments from the second half of the 19th century have survived, and there are fewer written references than in the first half of the century. Some makers in major cities, including Paris, London, and Vienna, still produced small instruments during this time, but this was not common. Only the larger wind instrument companies that had been established at the end of the 19th century included small bassoon models in their catalogues. Almost none of these instruments have survived, however, and it is possible that these now-rare instruments were included in order to enlarge the makers' catalogues. The British company Boosey included a fagottino model in its 1899 catalogue, and Wilhelm Heckel listed a small 24-keyed instrument in his catalogue from 1907.[27] In Paris, some large companies, including Buffet-Crampon and Gautrot Anîé, also referred to small instruments.

Small bassoons were presented at universal exhibitions at the turn of the 20th century. At the 1889 Universal Exhibition in Paris, Constant Pierre described the new models introduced by the company Evette et Schaeffer. They included bassoons of various sizes with 15 keys, a minor third higher (in E-flat), as well as a fourth (in F) and a fifth (in G).[28] It is not clear if any of the

26 Ibid., 25.

27 Boosey & Hawkes Archive, "B&Co. Instruments Wood 3 (1896–1904)" 1896, HM/B&H A227/015. Heckel, *Verzeichnis über Künstler-Instrumente*, Biebrich: Heckel 1907.

28 Pierre, *La facture instrumentale* (see n. 25).

Table 4: List of surviving small bassoons manufactured between 1850–1914.

MAKER	INSTRUMENTS	PROVENANCE	DATE
Anonymous	7-key fagottino. FT64	France	ca. 1850–1890
Heckel, W.	18-key tenoroon in F. FT88	Biebrich	1907
Pelitti	12-key tenoroon in F. FT105	Milan	ca. 1828–1870
Riva	13-key tenoroon in F. FT47	Ferrara	ca. 1860–1870
Spada	Tenoroon. FT120	Bologna	1873
Morton	15-key tenoroon in F. FT103	London	ca. 1870
Boosey & Co.	10-key tenoroon in F. FT75	London	ca. 1880
Gautrot Aîné	16-key tenoroon in F. FT36	Paris	ca. 1845–1884
Schubert	13-key tenoroon in F. FT5	Paris	ca. 1860
Tribert Marzoli Boehm	15-key tenoroon in F. FT37	Paris	ca. 1865
Evette & Schaeffer	17-key tenoroons in E-flat, F, G. FT83	Paris	1889 & 1912
Buffet-Crampon	Tenoroon. FT76	Paris	ca. 1900

instruments presented in the exhibition have survived, or whether they were even produced following the Exhibition. In the same category of experimental instruments, there is a remarkable model, built jointly by Marzoli and Triebert, that attempted to adapt some of Boehm's ideas to the bassoon. The key system of this instrument FT37 is that of a late 19th-century bassoon (Jancourt-Buffet model), with some extra Marzoli-Boehm harmonic keys in the wing joint, including a key mechanism operated by the left thumb and the L1, L2, L3 tone hole combination.[29] According to Waterhouse, Tamplini exhibited a Marzoli tenoroon in 1887 in London.[30]

Apart from a few unique examples, there were no small bassoons being produced by the turn of the 20th century. After World War I, these instruments

29 FT37: 15-key tenoroon, A. G. Philippe Marzoli TMB (Triebert Marzoli Boehm), Paris, ca. 1865.

30 William Waterhouse, *The Proud Bassoon: An Exhibition Showing the Development of the Bassoon over the Centuries: The Waterhouse Collection of Bassoons and Related Items*, Edinburgh, Scotland: Edinburgh University Collection of Historic Musical Instruments 1983.

became obsolete and fell into obscurity. There were no fagottini built during most of the 20th century, while surviving historical small bassoons were decontextualised and displayed solely as curiosities in museums. In the closing years of the 20th century, however, the idea of making small bassoons for pedagogical purposes was introduced. The sole purpose of this modern fagottino is educational; it is used as an aid for younger children to start learning the bassoon in a manner that is physiologically appropriate, similar to the way a ¾-sized violoncello serves as a bridge to a full-sized one.[31]

New interest in fagottini

The rebirth of the fagottino as an educational tool for children had its genesis at the International Double Reed Society (IDRS) meeting held in Manchester in 1989. According to Richard Moore, several original small bassoons from the 19th century were on display at the conference.[32] Many participants showed interest in the instruments, which led to the idea of building a simplified small instrument using the modern German system, which could serve as a beginning instrument for small children. Moore commissioned the instrument maker Guntram Wolf with this task, and Wolf then designed and built a modern tenor bassoon for children and began marketing the instrument in 1992. Soon afterwards, several other makers such as Fox (USA), Moosman (Germany), and Walter Bassetto (Switzerland) began making their own versions of this pedagogical tool. The modern German-system fagottino is nowadays a popular instrument in music schools and conservatories and has become a useful tool for children to start playing the bassoon.

The interest in small bassoons that encouraged the reinvention of fagottini at the Manchester meeting was certainly linked to a public concert at the IDRS conference on 16 August 1989, where fagottini and tenoroons played together in an ensemble after a century in oblivion. For the performance of an early 19th-century Harmoniemusik work by Johann Georg Michael Frost, some period instruments were used, including original instruments such as

31 For detailed information about the modern pedagogical approach with the fagottino, see the article by Letizia Viola in this volume.

32 Richard Moore, "The Renaissance of the Tenor Bassoon", in: *Double Reed News* 19 (1992), 37–39.

Waterhouse's Savary jeune tenoroon and some copies made by Guntram Wolf. The *Parthia* in C major for two octave bassoons, two tenor bassoons, two bassoons and two horns was performed by an ensemble made up of Günter Angerhofer, Klaus Hubmann (octave bassoons), Yoshinori Tominaga, Thomas Kiefer (tenor bassoons), Elke Filthuth, Guntram Wolf (full-sized bassoons) and Eva-Maria Görres and Teunis van der Zwart (horns), with William Waterhouse as conductor.[33]

This 1989 meeting probably inspired the reinvention of the modern (pedagogical) fagottino, but it also brought the ignorance of the instrument's existence that had persisted through most of the previous century to an end. Nevertheless, early in the 21st century, there had been few mentions of historical fagottini, and no significant effort had been made to preserve their history.[34] Only in 2017, thirty years after they were rediscovered, did a research team in Basel, Switzerland begin to reconstruct the history of these forgotten instruments. The research project, carried out at the Schola Cantorum Basiliensis from 2017 to 2023, is further described in other articles in this book and entailed a thorough organological and musicological analysis of small bassoons from the 18th and 19th centuries. This research included trials of reconstructions using innovative tools such as 3D computed tomography and the 3D printing of small bassoons.

The final outcomes of this research group were presented in February 2023 at a symposium that also included a concert where a significant collection of historical small bassoons of different sizes were introduced to the public. The concert included the iconic *Parthia* by Frost that was played in Manchester more than thirty years earlier. In this concert, held in the Kleiner Saal of the of the Musik-Akademie Basel on 24 February 2023, Frost's work was performed by an ensemble made up of Adrià Sanchez Calonge, Hugo Rodríguez Arteaga (octave bassoons), Letizia Viola, Áurea Domínguez Moreno (tenor bassoons), Donna Agrell, Giovanni Battista Graziadio (full-sized bassoons), and Oliver Mourault, Markus Wütrich (horns). Among the instruments used were some made during the course of the project, including 3D-printed copies of fagottini

33 *18th Annual IDRS Conference Manchester*, <https://web.archive.org/web/20101216214013fw_/https://idrs.org/events/conference/Manchester/index.89conf.html> (13 June 2023).

34 One of the most remarkable exceptions can be found in the chapter about fagottino in: Kopp, *The Bassoon* (see n. 14), 222–228.

made after Grenser and Scherer, as well as a wooden reproduction of a Savary jeune tenoroon.

In the 21st century, the history of small bassoons is currently at a crossroads. The 1989 IDRS Manchester conference, including its concert and presentation of fagottini, was pioneering in its use of small bassoons, and led to them being re-introduced with a pedagogical approach. The nearly six-year interdisciplinary research project at the Schola Cantorum went on to unlock the research and performance potential of fagottini in a broader sense. As historical precedent is re-examined, these small instruments will continue to be re-contextualised and incorporated into our musical landscape.

Small Bassoons by the Savarys: Context and Style

James Kopp

In the findings of the three-year SNSF project "Out of the bass register", some forty-seven of the documented makers of small bassoons are known by a single surviving example or relevant mention. Fifteen more makers left a few more instruments – from two to six surviving examples. Virtually all these artisans are known primarily as makers of standard bassoons. Within this cohort, the most prolific maker of small bassoons before the twentieth century was Jean-Nicolas Savary *jeune*, who made at least fourteen small bassoons.[1] What circumstances led to this singular wave of creation, we may ask.

In venturing a partial answer to this question, the following article offers a selective survey of the activities of the Savary family and their production of bassoons of all sizes. The survey is presented in four short chapters. In the first, extending from 1799 to 1817, the known activities of the father and son are mostly combined under the single name Savary.

In the second chapter, beginning in 1817, the son establishes a separate residence and begins to use his own marque or stamp, as Savary *jeune*. His efforts to promote his instruments are numerous and rich in detail. Meanwhile, the father begins to describe himself as Savary *père*. First the father and then the son begin to stamp dates on most of their instruments.

In the third chapter, the son has begun production of small bassoons bearing the stamp Savary *jeune*. Surviving examples are date-stamped as early as 1824 and as late as 1843, although about half of the surviving tenoroons by Savary *jeune* lack a date stamp.

1 In the "Instrument Catalogue of Small-Sized Bassoons, ca. 1700–ca.1915" (October 2024), in this volume, one tenoroon is attributed to Savary *père*, while one fagottino and thirteen tenoroons are attributed to Jean Nicolas Savary *jeune*. Citations below of FT numbers refer to this catalogue.

In the fourth chapter, Savary *jeune* has apparently ceased making small bassoons, and both his publicity for and his production of standard bassoons appear to have slowed. The last surviving dated bassoon is stamped 1853, the year of his death.

Several instruments by the Savarys survive in the collection of the Musée de la musique, Paris, formerly the collection of the Paris Conservatoire. Brief comments published in 1875 by Gustave Chouquet, an early curator of the collection, reflect lore from contemporaries who likely knew Savary *jeune* or his associates.[2] Another early biographer of the Savarys was Constant Pierre, who had studied bassoon at the Paris Conservatoire, obtaining a *premier accessit* in 1881. In 1890 Pierre published a study of the musical instruments displayed at the Paris trade exhibition of 1889.[3] The dedication is to his bassoon professor, Eugène Jancourt, who likely informed Pierre's comments on Savary. In 1893, Pierre published *Les Facteurs d'instruments de musique*, a diachronic study of the topic.[4] And in 1900, as an official of the Paris Conservatoire, Pierre was the compiler and author of a data-filled book on its history, teachers, and students.[5] These accounts set the tone for later writing about the Savarys. Pierre gave an understandably incomplete picture of the Savarys' lives and work, but his comments also contain further inaccuracies that we can now begin to correct.

2 Gustave Chouquet, *La Musée du Conservatoire national de musique: Catalogue raisonné de cette collection*, Paris 1875, 59.

3 Constant Pierre, *La facture instrumentale à l'Exposition universelle de 1889: Notes d'un musicien sur les instruments à souffle humain nouveaux et perfectionnés*, Paris: Librairie de l'art indépendant 1890, 25–26.

4 Constant Pierre, *Les facteurs d'instruments de musique: Les luthiers et la facture instrumentale*, Paris: F. Sagot 1893, 148; 299–300; 368.

5 Constant Pierre, *Le Conservatoire national de musique et de déclamation*, Paris: Imprimerie Nationale 1900.

Savary: two generations under one roof, 1799–1817

The given name of Savary *père* was Jean-Baptiste. He was baptised on 13 August 1751 in Guise, a town in Aisne, Picardy.[6] When he married there on 20 January 1772, he was described as a master turner, or *maistre tourneur*.[7] Present at the marriage ceremony was his father, also named Jean-Baptiste and likewise described as a master turner. Guise was a small town of perhaps 3,000 residents, home to no known makers of musical instruments. Savary *père* would die in Paris on 30 April 1831.[8]

Jean-Nicolas Savary *jeune* was baptised in Guise on 16 August 1781, five years earlier than Pierre stated.[9] The family had relocated from Guise to Paris by 1799, when "Savary" was listed as a *facteur d'instrumens* in a Parisian directory.[10] Sometime between 1781 and 1799, Savary *père* learned the trade of instrument making. As a master turner, he presumably found work as a journeyman with one of the Parisian instrument makers. By 1799, the son was eighteen years old; he likely learned the trade under his father or another Parisian maker. He would die in Paris on 9 February 1853.

There was also an older brother, Jean-Louis Savary *fils aîné*, baptised in Guise on 15 September 1778.[11] He too might have been involved in the family business. He was listed from 1828 to 1845 at rue de la Harpe 99 in Paris as a *luthier* (a term sometimes used for makers of wind instruments), but there is no specific evidence that he made bassoons.[12]

In 1799, "Savary" was listed at Carefour Benoît, 937. This address is stamped on a five-key clarinet surviving in the Museé de la musique, Paris. Records are incomplete, but by 1802 "Savary" is listed at rue Taranne, 747, so

6 https://gw.geneanet.org/dbul?lang=en&p=jean+baptiste&n=savary&oc=4 (23 August 2023).

7 *Acte de mariage en ligne (image 49, acte n° 3), via* https://gw.geneanet.org/cousine?n=savary&oc=2&p=jean+baptiste (23 August 2023).

8 Archives de Paris; Paris, France; *Etat Civil 1792–1902*.

9 Pierre, *Le Conservatoire national* (see n. 5), 849; Archives Départementales De L'aisne; Laon, France; *Etat Civil 1792–1905*.

10 *Almanach du commerce de Paris*, Paris 1799, 104.

11 Archives Départementales De L'aisne; Laon, France; *Etat Civil 1792–1905*.

12 *Annuaire musicale*, Paris 1845, 177.

this clarinet can be dated circa 1799–1801, and thus among the earliest of the family's instruments known to survive. Prior to 1817, three events in the Savary family history shed light on the son's personal activities. In 1808, Savary *jeune* received a first prize in bassoon from the Paris Conservatoire, at the comparatively late age of twenty-six.[13] Taught by Thomas Delcambre, Savary did not receive a lesser prize in earlier years, unlike many bassoon pupils at the Conservatoire.

On 14 February 1808, the bassoon maker Dominique Porthaux disputed a claim by "M. Savary" to have invented a bassoon bocal made of wood.[14] Twentieth-century writers have assumed that the reference is to Savary *père*. But by that year, Savary *jeune* had become an expert bassoon player, twenty-seven years old, and probably an experienced maker in the family business. The question of which Savary produced the wooden bocal, if not father and son jointly, is open to debate.

Porthaux claimed to have invented such a wooden bocal himself and cited endorsements by the eminent bassoonists Ozi and Delcambre. In an item in the *Journal de Paris*, he is quoted as saying that "M. Savary knows at most the outer form" of the bocal, "without suspecting the interior work". Porthaux had invented the crook for use with his tenor bassoon, which he called the *tenore*. Meanwhile, the original claim by "M. Savary" does not survive. Neither does Porthaux's wooden bocal survive, although one tenor bassoon by him does.[15]

A third reported event is that Savary *jeune* played fife in the *Pupilles de la garde* (or *garde impèriale*). Chouquet and Pierre stated that Savary *jeune* used a fife signed "Savary / Paris", which survives in the Musée de la Musique, Paris, E. 479. According to Chouquet, Savary *jeune* made the fife himself.[16] But Pierre, writing eighteen years later, stated that Savary *père* made the fife, which the son played.[17]

13 Pierre, *Le Conservatoire national* (see n. 5), 638.

14 "INSTRUMENTS A VENT. Avis a MM. les Artistes & Amateurs de basson," *Journal de Paris*, 14 February 1808, 8.

15 FT21.

16 Chouquet, *La Musée du Conservatoire*, 59.

17 Pierre, *Les facteurs* (see n. 4), 299.

Given that the fife is stamped with Paris as the location, Savary *jeune* was at least eighteen years old when it was made. He was twenty-nine years old when the *pupilles de la garde impèriale* were established, by an order of Napoleon in April 1811.[18]

If Savary *jeune* made the fife, as Chouquet wrote, was he also involved in producing bassoons while under his father's roof? Writers since Pierre have assumed that several undated bassoons stamped "Savary" were built by the father alone. It is not unthinkable, however, that Savary *père* began to produce bassoons only after his son had learned the bassoon, a few years before 1808. The bassoon is typically the last of the common woodwinds that a maker will choose to offer, owing to complexities that arise from the asymmetry of its wing and boot joints.

We know nothing of the performing abilities of Savary *père*. It is unproven but conceivable that Savary *jeune* was responsible for persuading his father to add bassoons to his production of other woodwinds. In 1817, when the father first added *père* to his signature on a bassoon, Jean-Nicolas was thirty-five or thirty-six years old, at the midpoint of his life. Aside from study of the bassoon and service as a military fifer, what activities can we logically ascribe to Savary *jeune*'s life prior to 1817?

Speaking hypothetically, any or all of the instruments marked "Savary" might have been jointly produced in a family workshop which included the father Jean-Baptiste, the son Jean-Nicolas, and possibly the older son Jean-Louis. In addition to bassoons, clarinets, an oboe, the fife, and a flute, instruments bearing the simple "Savary" stamp include a single five-key tenoroon.[19]

18 See Jerôme Croyet, "Les pupilles de la Garde: notes et archives": https://sehrileblog.jimdofree.com/2020/06/22/les-pupilles-de-la-garde-notes-et-archives/ (5 August 2023).

19 FT25 in the Basel database. https://www.historical-bassoon.ch/fagottino-tenoroon-instrument-catalogue/ (3 May 2023).

Savary jeune establishes a separate identity, 1817–1843

The earliest known date-stamped instrument by either Savary is a bassoon signed by Savary *père* and dated 1817.[20] For whatever reason, no surviving bassoons by Savary *jeune* are known to bear a date stamp earlier than 1820.[21]

In 1809 Savary *jeune* married Julie Rosalie Deroi, and children were born to them in 1810, 1811 and 1821.[22] The couple apparently resided with Savary *père* at rue Saint-Denis, 24 (documented from 1806–1810) and at Place Saint-Jacque-la-bouchérie (1812–1813) until around 1817, when Savary *père* had moved to rue des Ecrivains, 24 (1817–1820). Meanwhile, Savary *jeune* was listed at a separate address, rue Bussi, 15, during at least the years 1817–1823.

By 1818, Savary *jeune* was visibly eager to promote his bassoons and his brand name. One tactic was to introduce innovative designs; a second was drawing attention to his credentials and to endorsements by prominent bassoonists; a third was displaying extraordinary bassoons in trade exhibitions.

One innovative design feature easily visible in surviving bassoons by Savary *jeune* is the shape of the *épaule*, or wing, into which the finger holes for the player's left hand are drilled. In the early tenoroon marked "Savary" (FT24) the transitions from the cylindrical body to the *épaule* are modeled as convex curves, typical of many classical bassoons. In the Savary *jeune* tenoroon stamped 1824 (FT60), the curves are slightly concave, and in the fagottino stamped 1827 (FT25), the curves are decisively concave (see Fig. 1). This design trend is present in the maker's standard bassoons as well.

In his printed notices, Savary *jeune* did not comment on this minor decorative detail. But he repeatedly called attention to the mechanised tuning slides he added to the wing joints of some of his bassoons. In a notice of 1821, he was described as an artist of the Théâtre Italien, amid quoted endorse-

20 https://davidrachor.com/wp-content/uploads/2024/06/Savarypere5-O-Koster-General-Information.pdf (13 October 2024).

21 The 1820 stamp is depicted at https://davidrachor.com/savary*jeune*1-o-privatecollection-photos/ (7 August 2023).

22 https://gw.geneanet.org/dbul?n=savary&oc=&p=jean+nicolas (7 August 2023).

Fig. 1: Early (convex) and later (concave) modeling of the épaule in earlier and later small bassoons by the Savarys. (a) F24, a tenoroon signed 'Savary / Paris' (before 1817). (b) FT25, a fagottino signed 'Savary jeune / Paris // 1827'. Photos: (a) Donna Agrell, Áurea Domínguez, Giovanni Battista Graziadio, and Vincenzo Onida (2019). FT24 Savary Pére 5-key tenoroon [Data set]: https://doi.org/10.5281/zenodo.3270534 (b) Idem., FT25 Savary Jeune (2) 13-key fagottino [Data set]: https://doi.org/10.5281/zenodo.3241877.

ments from Delcambre, Gebauer, and Dossion – all bassoonists in the orchestra of the Académie de musique, or Paris Opéra – as well as from Fougas, who was first bassoonist at the Théâtre Italien.[23]

23 *Tablettes universelles* 15, Paris 1821, 453. How Savary arranged the coup of a detailed mention in this selective publication, subtitled "Résumé de tous les journaux et bibliographie générale", is unknown.


RUE N°
1er PRIX DE BASSON. MÉDAILLE D'ARGENT.
SAVARY JEUNE,
Élève du Conservatoire,
FACTEUR D'INSTRUMENS DE MUSIQUE,
TELS QUE
Bassons ordinaires, à coulisses et à mécaniques; Flûtes, Clarinettes, Serpens-Bassons, etc., etc., etc.; Étuis en tous genres,
Anches, Goupillons, grands Pavillons, etc., pour Bassons; Boîtes à Anches, Embouchures, etc, etc.;
Fait des Fournitures complètes pour Musiques militaires, Orchestres de Théâtres, etc.
Paris, le 11 avril 1834

Fig. 2: Detail of a printed billhead of Savary jeune, dated 11 avril 1834, citing his *1er Prix de basson* (Paris Conservatoire, 1808) and a *Médaille d'argent* (see upper right corner), presumably from an unspecified trade exhibition. Nicholas Cardoze collection.

He also noted that his mechanised tuning slide dated from 1818, three years earlier.[24] Perhaps this concern for timely credit helps explain the customary dating of his instruments from 1820 onward: the stamped dates were evidence of his inventions, if not legal patents.

Many biographers of Savary *jeune* have claimed that he did not participate in the Paris trade exhibitions. But printed evidence suggests that he took part in at least one exhibition, winning a silver medal. An invoice survives, written by Savary *jeune* in 1834, in the upper right corner of which is printed *Medaille d'argent* (Fig. 2).[25] No year or place is given for receipt of this silver medal.

The three most recent exhibitions in Paris before 1834 would have been in 1819, 1823 and 1827.[26] Among surviving bassoons signed by Savary *jeune* are at least three extraordinary instruments that seem designed to draw attention in a public exhibition. Any one of them might have earned Savary the silver medal mentioned on the 1834 billhead (Fig. 3).

The strikingly carved and gilded bell of a surviving bassoon in Nuremberg has a purely decorative function.[27] In an engraving on the upper boot

24 Ibid.

25 Nicolas Cardoze collection, Lyon.

26 The invoice was dated 11 avril 1834. Medals would have been awarded some weeks later, as the 1834 exhibition ran from 1 May to 30 June.

27 Germanisches Nationalmusem, MI 472. https://objektkatalog.gnm.de/objekt/MI472 (9 July 2023).

Fig. 3: Bassoon with sculpted and gilded bell, signed 'Savary *jeune* / Paris'. Germanisches Nationalmusem, MI 1472. (a) Finger side. (b) Thumb side. An engraving on the upper boot ferrule reads: "Savary fils j^{n} / Elève du Conservatoire / Royale de Musique rue / de Bussi St. G[erm]ain / a Paris". Germanisches Nationalmuseum. Photo: Günther Kühnel.

ferrule is the name Savary *fils j*^{n}. He names himself as a student of the Conservatoire Royale; that designation dates the inscription to 1816 or later.[28] The engraved address and the convex curves of the *épaule* on the wing joint are compatible with a date of 1817 or a little later. Was this special bassoon made for the Paris exposition of 1819? The evidence is suggestive, if not conclusive.

28 The meaning is obviously retrospective. In 1808, when Savary received his first prize, the conservatoire under Napoleon was called imperial.

Fig. 4: Bassoon with five tuning slides, signed "Savary *jeune* / Paris // 1823". National Music Museum, Vermilion, USA, NMM 2418. The bassoon with simple joint inserted: (a) finger side, (b) thumb side. Details of tuning slides: (c) wing joint, (d) upper boot and long joints, (e) lower boot joint. National Music Museum, The University of South Dakota, Jonathan Santa Maria Bouquet, Photographer (a, b, d, e); Simon Spicer, Photographer (c).

Fig. 4: c–e

An even more remarkable bassoon is stamped with the date 1823 (Fig. 4).[29]

Many of Savary *jeune*'s bassoons have two tuning slides on the wing joint. But this bassoon has a total of five, including two on the *culasse* or boot joint, and one on the bass joint. Was this uniquely complicated bassoon built for the Paris exposition of 1823? An affirmative answer is again plausible, if not provable.

A third attention-getting instrument is Savary *jeune*'s unique octave bassoon or fagottino, number FT25 in the Basel database (Fig. 5).

This elaborate thirteen-key instrument is a showpiece. Domínguez noted that "in the case of the fagottino there is also the inscription 'inv.' (invenit), since he was probably experimenting with the size and by incorporating many

29 National Music Museum, Vermilion, USA, NMM 2418, https://emuseum.nmmusd.org/objects/5838/bassoon-c?ctx=d856551ece4e34e73c321edd344a35bce8afb254&idx=0 (9 July 2023).

Fig. 5: FT25, a fagottino or octave bassoon, signed "Savary *jeune* / Paris // 1827". (a) finger side. (b) thumb side. Photo: Donna Agrell, Áurea Domínguez, Giovanni Battista Graziadio, and Vincenzo Onida (2019). FT25 Savary Jeune (2) 13-key fagottino: measurements, photos, endoscopic video [Data set] on: https://doi.org/10.5281/zenodo.3241877.

keys …".[30] Its crook key is among the earliest known by Savary *jeune*. The G-sharp key for the right thumb is unique within his output, possibly inspired by an Almenräder-type bassoon displayed at the Schott store in Paris from 1826 (the Almenräder bassoon displayed in Paris is discussed below).

Why did Savary *jeune* decide to make an octave bassoon in 1827? We can only conjecture, but the luxurious fagottino would have made for an eye-catching display piece in a trade exposition. In this third instance, this possibility is again plausible and noteworthy. If Savary *jeune* had received a silver medal before 1834, any of these three instruments might have figured as a winner of the silver medal.

Savary's documented career as a professional performer begins during this period. He was not "solo" bassoonist at the Théâtre Royale Italien, as Pierre and many later writers have claimed; he was the second player listed from 1817 to 1830.[31] It is interesting to note that, during the years 1824 to 1826, Savary would have played under Rossini, who was music director and conductor of the Théâtre Italien. Before and after Rossini, the composer Paer held that role.[32]

Savary jeune produces small bassoons, 1824–1843

The inclusive dates 1824 to 1843 appear on eight small bassoons signed by Savary *jeune*. Among these, the earliest-dated tenoroon (FT60) bears the date 1824, the octave bassoon (FT25) is stamped 1827, and the other six dated tenoroons are clustered in the years 1832–1843. Meanwhile, six more tenoroons signed by Savary *jeune* are undated, though comparable in style to others

30 Áurea Domínguez, "Fagottini in the Philarmonie de Paris: Researching the largest collection of small-sized bassoons", in: *Glareana* 68/2 (2019), 15.

31 A directory published in 1817 lists Fougas and Savary under *bassons* at the theatre: François-Joseph Grille, *Les Théâtres*, Paris 1817, 91. A directory of 1819 lists Fougas as *premier basson* and 'Solvary' as *deuxième basson*: *L'indicateur général des spectacles de Paris*, Paris 1819, 88. Though records are incomplete and possibly inaccurate, Savary is named as a bassoonist at the theatre as late as the 1830 edition of *Almanach des spectacles pour Paris*. His name always follows that of Fougas (sometimes Fourges), even when neither is specified as first or second bassoon.

32 David Charlton, "Paris 4, v: The Théatre Italien", in: *The Grove Dictionary of Opera*, ed. Stanley Sadie, London: Macmillan 1992, vol. 3, 870.

made in this period. Except for FT24 and FT60, all the dated and undated tenoroons examined are in F.

Why Savary *jeune* chose to make a tenoroon in G in 1824 is not clear. (Oddly, the tenoroons are never mentioned in Savary *jeune*'s several surviving publicity notices.) But one can speculate. While the early tenoroon in G (FT24), signed simply "Savary/Paris", is also unexplained, it is plain in style, made of clear maple and provided with only five keys. Its simplicity and small size might indicate its use by a young student or a mounted military musician.[33] In contrast, the 1824 tenoroon (FT60) is made of handsome flamed maple and has eleven keys, more than most of the maker's standard bassoons produced by that date.

The possibility was raised above that Savary *jeune* created his octave bassoon as an attention-getting exhibit for the Paris exposition of 1827.[34] A similar description fits most of the twelve tenoroons Savary *jeune* built from 1824 to 1843. Each has from ten to sixteen keys – a large number for the time.[35] Most are made of flamed maple, although some are of plainer maple and two are of rosewood.

Who were the original owners of these tenoroons by Savary *jeune*? We can suggest a few possible names. Guillaume Fougas was named in the *Agenda musicale* of 1835 as offering reeds for *baryton-quarte et quinte de basson*.[36] He sat beside Savary *jeune* in the Théâtre Italien orchestra from 1817 to 1830 and

33 The mounted musician had to worry about the horse throwing back his head, and an upright instrument might have been safer than a clarinet. See Anthony Baines, *Brass Instruments: Their History and Development*, New York: Scribner 1974, 254, on the upright format of *saxhorns de cavallerie*. A five-key fagottino studied by the Basel team (FT17) bears the marque of Jacoby *fils*, a musician in the Burgundian Cavalry during the late eighteenth century. See *Bulletin de la Société Archéologique, historique, littéraire et scientifique du Gers* 5–6 (1904), 318.

34 Another possibility is that Savary made the octave bassoon for Francois-René Gebauer, who was then the bassoon professor at the Conservatoire. Gebauer had endorsed Savary *jeune*'s bassoons by 1821, and in 1826 he retired as first bassoonist at the Paris Opera. We may conjecture that Savary *jeune* displayed the octave bassoon, and then presented it as a gift to Gebauer, the eminent bassoonist.

35 https://www.historical-bassoon.ch/fagottino-tenoroon-instrument-catalogue/ (5 June 2023).

36 *Agenda musicale*, Paris 1835, 108.

was quoted in an endorsement in 1821, implying that he played a standard bassoon by Savary *jeune*. Odds are that this long-time colleague owned one of Savary's tenoroons; most reed makers need access to a suitable instrument for testing their reeds.

The tenoroon was sometimes used in recital. Pierre cited the example of Eugène Jancourt, who played "several solos" on an instrument *en mi bemol* by Savary, in concerts given in the salon of a piano manufacturer in Paris from 1838 to 1840.[37] While entertaining his audience, Jancourt would have also helped to promote Savary *jeune*'s novel instrument. (During these years, Jancourt also played a standard bassoon by Savary *jeune*, a gift from Gebauer, his teacher.)

Pierre's mention of a tenoroon in E-flat or *basson tierce* is a puzzling reference. No surviving tenoroon in E-flat by Savary *jeune* is known, although three Savary tenoroons were not available for examination by the Basel team.[38] One of these could be the E-flat one mentioned by Pierre, who presumably spoke correctly in describing its pitch.[39]

Pierre also recounted that the cor anglais was a rarity in some provincial opera houses during the early 19th century. As a substitute, a tenoroon was sometimes used. Pierre cited Adolphe Reickmans, who played a *basson en fa* at the Bordeaux opera house in 1833.[40] Reickmans, who had played in the Paris Opéra orchestra from 1822 to 1833, would certainly have been aware of Savary, whose bassoons were endorsed by his colleagues Delcambre, Gebauer, and Dossion.[41]

Pierre also referred to Jean Espaignet as having played a *basson en fa* to replace the cor anglais in Bordeaux.[42] Espaignet was born in Bordeaux in 1823, so his service at the Bordeaux opera house can be estimated to have been

37 Pierre, *La facture instrumentale* (see n. 3), 26.

38 https://www.historical-bassoon.ch/fagottino-tenoroon-instrument-catalogue/ (5 June 2023).

39 Pierre, *La facture instrumentale* (see n. 3), 27, illustrated a *basson tierce* by Evette and Schaeffer, shown at the Paris exhibition of 1889.

40 Pierre, *La facture instrumentale* (see n. 3), 25–26.

41 Meanwhile, tenoroons in F by other makers, including three by maker Frédéric Guillaume Adler (FT1, FT2, FT61) cannot be excluded as possibilities in Pierre's anecdotes.

42 Pierre, *La facture instrumentale* (see n. 3), 25–26.

around 1840, or later.[43] Espaignet studied under Barizel at the Paris Conservatoire, winning a first prize in 1843. He would surely have been aware of Savary *jeune* and might well have used a tenoroon by him.

Notable is that evidence for all four of these possible uses – by Fougas, Jancourt, Reickmans, and Espaignet – appears to cluster within the documented period of Savary's production of small bassoons.

The tuning slides that Savary *jeune* incorporated into some of his standard bassoons are not known on his small bassoons, despite their other luxurious features. This absence might suggest that the typical owner used the small bassoon purely at will and had no need to match the pitches of other instruments.

Also dating from this period is evidence that an Almenräder model bassoon was on display in the Schott fils music shop in Paris, which operated from 1826 to 1829.[44] The journalist Fétis noted this in 1828, writing that the Parisian maker Adler had responded to the Almenräder model in later designs of his own bassoons. Partly echoing the same language in 1836, Frédéric Berr noted the Almenräder model, but cited the bassoons of Savary *jeune* as reactions to Almenräder's influence.[45] Berr added that his fingering chart was based on a recent model of Savary *jeune*, implying that the maker's bassoons were in use at the Gymnase Musical Militaire, where Berr was director from 1836 to 1838.

On Berr's chart, E3 is fingered without the traditional need to close the right thumbhole to avoid flatness. In compensation, however, the A-flat key for the right little finger is opened. Despite this requirement, Berr's fingering is simpler. The simplified fingering innovation by Almenräder was an exception to most French bassoon fingerings, earlier and later. On the 1827 fagottino, the unique right-thumb key for G♯, mentioned above, was another standard feature of Almenräder's bassoons. Savary *jeune* might well have seen this key in the Schott shop in Paris during the years 1826 to 1829.

43 Espaignet was born 31 October 1823, according to Pierre, *Le conservatoire national* (see n. 5), 750.

44 The shop of fils de B. Schott was in the rue de Bourbon, 17. See, for example, *Almanach du commerce de Paris*, Paris 1827, 281.

45 Frédéric Berr, *Méthode complète de basson*, Paris [1836], 2.

The last years of Savary *jeune*, 1843–1853

After 1843, the last date appearing on a Savary tenoroon, there is no further evidence of Savary *jeune* having made small bassoons. It is possible that the fashion for small bassoons had passed, as no later concert uses in France are reported.

Meanwhile, Savary's documented production of standard-size bassoons also declined after 1843.[46] In Phillip Young's inventory of Savary *jeune*'s surviving standard-size bassoons, only four are dated later than 1843, compared to twenty-nine dated 1843 or earlier.[47] As late as 1835, Savary's notice in a directory read: "premier prix de basson, rénomée pour la facture de cet instrument". But later listings, dating from 1837 to 1852, were terse: "basson" or "fab. d'instrum. à vent", lacking the exuberant pride of his earlier listings. This apparent decline in Savary's production and promotion of his instruments is a mystery. Had the maker fallen ill? Had Savary *jeune* perhaps lost some of his influential mentors? Had bassoon fashions changed?

About possible illness, the historical record offers no comment, except that Savary *jeune* lived on until 1853, dying at the age of seventy-one. But clearly the power structure of the Parisian bassoon world shifted over the years. Three of Savary *jeune*'s endorsers of the 1820s were deceased by 1845: Delcambre (died 1825), Gebauer (died 1845), and Dossion (died ca. 1841). In 1837, Limberger and Marzoli were the first and second bassoons at the Théâtre Italien. Meanwhile, Savary was listed in an 1837 directory of musicians among the "amateurs de Paris" even while his name continued to be listed in other directories as a professional bassoonist.[48] Whether and how often he performed during his later years is unknown.

In the Paris exhibition of 1839, Savary *jeune*'s longtime competitors Frédéric Guillaume Adler and Jean Winnen won bronze medals for a "basson

46 Pierre, *La facture instrumentale* (see n. 3), 300, states that Savary *jeune* ceased making before 1840. This was not true, even if it appeared so to Pierre.

47 Phillip T. Young, *4900 Historical Woodwind Instruments*, London: Bingham 1993, 199–201. Seventeen bassoons on Young's list are undated or illegible. While this list was incomplete, anecdotal evidence of further Savary bassoons includes only a few unlisted examples dated later than 1843.

48 *Agenda musical*, Paris 1837, 227.

militaire" and a "Bassonore", respectively, both wide-bore models producing a greater volume of sound than the traditional bassoon. Both makers received medals again in 1844.

Meanwhile, new competitors emerged in Paris. The Belgian Jean-Baptiste Willent-Bordogni studied at the Paris Conservatoire, winning a first prize in 1826 and succeeding Fougas as first bassoon of the Théâtre Italien around 1831.[49] He surely was aware of Savary's bassoons. But by 1844 he called for the bassoon of the day to be modified or even re-made, and worked with a Belgian maker prior to 1842 to develop an improved bassoon.[50] In 1848 Willent would become professor of bassoon at the Paris Conservatoire and join the Paris Opéra orchestra.

In 1847, Eugène Jancourt, who had played Savary *jeune*'s tenoroon in 1838–1840, named him, along with Frédéric Guillaume Adler and Buffet Crampon, as able makers who contributed to the bassoon's improvement.[51] Jancourt's greatest enthusiasm, however, was now reserved for "M. Triebert, our excellent maker of bassoons", whose bassoon "obtained a real advantage over the old bassoon" with respect to evenness of sound and ease of fingering.[52]

Outside the conservative realm of bassoon making, the ideas of Theobald Böhm and Adolphe Sax pointed in a new direction. Böhm's rational principles of the bore shape, location and sizing of tone holes, and auxiliary venting made a powerful impression on judges of flutes at the 1839 Paris exhibition. In 1845, Adolphe Sax persuaded the French military establishment to adopt saxophones in military bands, temporarily displacing bassoons.

Savary likely didn't sympathise with these revolutionary currents, even if his later bassoons show some evolutionary changes in design. Many of them

49 *Annuaire dramatique* 3, Brussels 1842, 202, states that Willent (born December 8, 1809) assumed the principal bassoon chair at the Théâtre Italien "at the age of 20 years", while the *Almanach des spectacles* 2, Paris 1831, still lists "Fourges" (Fougas).

50 Jean-Baptiste Willent-Bordogni, *Méthode complete pour le basson*, Paris [1844], 3. Willent-Bordogni added that Adolphe Sax fils purchased one of the new models, made by [Georges Chrétien] Bachmann based on Willent-Bordogni's ideas.

51 Eugène Jancourt, *Méthode théorique et pratique pour le bassoon*, Paris 1847, 1.

52 Jancourt, *Méthode théorique* (see n. 51), 17. This was likely Frédéric Triebert, who had apparently succeeded his father Guillaume by 1845.

have more keys and some were made of rosewood, and some of his later bassoons feature a markedly wider bore.[53]

Conclusion

There is no known evidence that Savary *père*, a woodwind maker in Paris from 1799, had made bassoons before 1808. Surviving bassoons stamped "Savary/Paris" presumably date from before 1817, when the father began to add *père* to his stamp. In that year, Savary *jeune* turned thirty-six years of age and established a separate residence. More likely than not, Savary *jeune* had been involved in the production of some or all of the bassoons bearing the simple "Savary/Paris" stamp. Among these surviving instruments, none of them date-stamped, is the tenoroon in G, catalogued by the Basel team as FT24 and attributed by them (and the current owner, the Musèe de la musique, Paris) to "Savary père", without further explanation.

Other aspects of Savary *jeune*'s biography are shown here to need correction or updating. He was listed as second bassoonist, not first, in the Théâtre Italien orchestra from 1817 to 1830. He moved to a separate residence, rue de Bussy, 15, in 1817 and was listed as a *facteur des instruments* there in 1818. Contrary to statements by later writers, by 1834 he advertised having won a silver medal, presumably at a Paris trade exhibition held in 1819, 1823, or 1827.

Savary *jeune*'s one fagottino, dated 1827, is an elaborate showpiece equipped with up-to-date keywork, including a G♯ key for the right thumb, unique in the maker's output. It is not clear, however, that the silver medal was awarded for this instrument, and other surviving bassoons by the maker, datable to 1817–1819 and to 1823, also fit the description of a possible winner.

While Savary *jeune*'s 1827 octave bassoon is unique, we can speak of a vogue for the tenoroon that extended from 1824 to 1843. Seven tenoroons signed by Savary *jeune* bear dates from this period, while six more are signed but not dated. Most are made of vividly flamed maple and equipped with ten to sixteen keys, a large number for the time. The small bassoons are not advertised on Savary *jeune*'s billheads nor in his directory listings.

53 See bore measurement data at https://davidrachor.com/database-of-individual-historical-bassoons-test/ (5 May 2023).

Taking into consideration all of the above observations, it is reasonable to suggest that Savary *jeune*'s tenoroons were made mostly for professional bassoonists, or perhaps wealthy amateurs. Within the period described, two professional users of Savary tenoroons are confirmed, while two more are likely. The use of a tenoroon as a substitute for a cor anglais in Bordeaux appears to have been exceptional. Jancourt's performance on the tenoroon – as a novelty within a recital program of other works for standard bassoon – was perhaps a more typical use. Savary's luxurious tenoroons seem to have appealed to players who enjoyed owning a miniature instrument of high quality by the maker of their standard bassoons.

Less is known about the dating, owners, and uses of three surviving tenoroons (FT1, FT2, FT61) by Frédéric Guillaume Adler (1808–1854), a Parisian contemporary of Savary *jeune*. The relatively large number of keys present on each (11, 13 and 11, respectively) are compatible with production dates estimated to be around 1835 or 1840 by the Basel researchers; it seems that Adler was following the fashion begun by Savary *jeune*.

It's not easy to explain why this vogue arose in 1824, nor to explain why it appears to have ended around 1843. Tenoroons might have been used in public after 1843, of course, but no reports are known. Meanwhile, Savary *jeune*'s career as a conspicuous performer and tireless innovator seems to have faded by 1843, if not before. Rival performers and rival makers appeared, even as Savary *jeune*'s network of mentors and endorsers gradually retired or died. By 1853, the year of his death, he was producing standard bassoons, but no small bassoons.

After originating and maintaining the trend for small bassoons before the late twentieth century, Savary *jeune* himself outlived this trend by a decade. In the next generation, small bassoons were produced in Paris by Marzoli, Schubert, and Gautrot, but only as isolated single examples.

Repertoire, Performers, and Pedagogy

Rediscovering Forgotten Relatives

Donna Agrell

While strolling through instrument museums and viewing various woodwind models from the 18th and 19th centuries, one is confronted by a great assortment of clarinets, oboes and flutes in many shapes and sizes. And yes, there are also bassoons, large and small. Many of the higher woodwind types were included in the great Early Music revival of the latter part of the 20th century, with the notable omission of small-sized bassoons. Although the chalumeau, basset horn, oboe da caccia, and oboe d'amore all gained special positions in historical performance practice, the fagottino and tenoroon remained in glass cases, largely ignored. Their existence was noted by bassoon scholars such as Klaus Hubmann and James Kopp,[1] and a handful of brave souls even reported playing these octave-, fourth-, or fifth-transposing bassoons on occasion, but public appearances were a very rare event.[2] The small bassoons on display are commonly regarded as attractive toys, and museum visitors soon hurry on to view more 'serious' objects.

Over time questions multiplied about why these instruments existed, and the questioning became more active several years ago, when a research team in Basel decided to investigate the matter more thoroughly.[3] As the list of ex-

1 Klaus Hubmann, "Hoch gestimmte Fagotte (Tenorfagotte) in der Musik vom späten 16. bis zum späten 18. Jahrhundert", in: Christian Ahrens, Georg Klinke (eds.), *Flöte, Oboe Klarinette und Fagott: Holzblasinstrumente bis zum Ende des 18. Jahrhunderts*, München and Salzburg: Katzbichler 2011, 71–84. James B. Kopp, *The Bassoon,* New Haven and London: Yale University Press, 2012. Kopp describes the history, organology, and repertoire of small-sized bassoons over two centuries in a separate chapter, 222–228.

2 Such an event occurred on 16 August 1989 at the 18th Annual International Double Reed Society conference in Manchester: https://web.archive.org/web/20101216214013fw_/https://idrs.org/events/conference/Manchester/index.89conf.html (10 February 2023).

3 Two research projects, funded by the Swiss National Science Foundation and hosted at the Schola Cantorum Basiliensis, University of Applied Sciences and Arts Northwestern

tant instruments steadily grew, it became apparent that something important had been overlooked. As a result, more than 130 examples of small-sized bassoons have now been identified in museums and private collections, and it is evident that, over a span of two centuries, virtually all renowned European woodwind makers built these instruments.[4] And this only includes what has survived and been identified thus far.

What musical roles did these instruments have? Research confirms the existence of a relatively small number of works with specific scoring. Evidence of the substitution of tenoroon for cor anglais in French opera, as well as brief pedagogical mentions, were also found, but nothing that represents any reasonable correlation to the large number of instruments that were produced. Reports of a few virtuosi performing arrangements of opera arias, often in the form of variations or "potpourri", indicate that the range of these instruments was well-suited to this popular 19th century practice. Such compositions were rarely published, however, and mostly lost.[5]

Did composers leave decisions about the choice of an appropriate bassoon size to the performer, or were they imprecise with terminology in scores? Can it be assumed that these instruments were built primarily for pedagogical purposes or for use in military bands, and that they were otherwise not noteworthy? We can only speculate about the reasons for this obvious inconsistency; it is implausible that the finest and most famous workshops produced so many small-sized bassoons, some constructed of rare and valuable materials, only for them to be used as decorative curiosities.[6]

Switzerland, took place from May 2020–April 2023 and October 2017–September 2019. See project website: https://www.historical-bassoon.ch/ (7 July 2023).

4 For details about surviving instruments, see the Instrument Catalogue in this publication.

5 A celebrated bassoonist in Vienna at the beginning of the 19th century, Valentin Czeyka, first performed his *Variationen für Fagott*, with a tenoroon in 1815; this work has not yet been located. See: Theodore Albrecht, "Valentin Czeyka im Theater an der Wien: Der Solofagottist in Beethovens mittlerer Schaffenszeit", in: *Oboenjournale* 40–42, (December 2008–June 2009), 16, as well as Giovanni Battista Graziadio's article "Fagottino players: evidence of historical performance practice in 18th and 19th century bassoon repertoire" in this volume.

6 Hubmann, "Hoch gestimmte Fagotte" (see n. 1). Hubmann asks many of these questions in his very comprehensive discussion about the use of smaller bassoons. He reviews

Even if it is not yet possible to offer a conclusive explanation for this historical discrepancy, the inclusion of historical fagottini and tenoroons in our current instrumentarium offers a golden opportunity to add new options to pedagogical and performance practices. Unfamiliar timbres can be exploited, technical means expanded, and creative musical decisions will hopefully enrich concert offerings. The biggest task remains to (re)unite these instruments with their appropriate roles in the musical world, where, with very few exceptions, they have been generally ignored since the beginning of the 20th century. This paper will first describe a systematic method of evaluating bassoon repertoire, by reviewing the parameters of range, transpositions, and tonalities, followed by an overview of several musical examples in which these parameters have been tested with instrument copies produced in the SNSF research projects.

Repertoire evaluation

Range expansion in the 19th century

It is worthwhile to take a short detour at this point and to have a closer look at some historical perspectives on bassoon range, which is relevant to the discussion of bassoon sizes. One might presume that the expanding range during the instrument's development may have been why players gradually abandoned smaller bassoons, leading to their eventual demise at the end of the 19th and beginning of the 20th century. Why take the trouble to use multiple instruments, as other woodwind players still do, when everything can be played on just one?

Even though early 19th-century full-size bassoons already had a theoretical range of three and a half octaves, not everyone was enthusiastic about the timbre of the highest notes. The eminent music critic Castil-Blaze reproached the Swedish-German virtuoso Frans Preumayr upon hearing Preumayr's debut of Crémont's *Concertino militaire* in 1830. The work highlights the (full-sized) bassoon's upper octave, including high notes that were evidently unfamiliar to the Parisian audience:

known, specific scoring for tenoroon and fagottino but also extensively puts forth a strong case to reconsider bassoon repertoire which may be performed on smaller instruments.

> […] Castil-Blaze, although commenting positively on Preumayr's agility and lyrical style, was not satisfied with his tone quality in the high register, suggesting that the root of this problem lay with the bassoonist's ambition to go half an octave beyond the usual range of three octaves. He advises Preumayr to "cut the four new strings of his lyre" and return to a smaller range.[7]

On the other hand, the high-register capacities of Preumayr were roundly applauded by critics in London, his next stop. Taste was regional, then as now:

> Preumayr is the best performer on the bassoon that we ever heard, taking tone, taste and execution into consideration; he makes nothing of a rapid flight from the lowest B flat in the bass to E-flat, fourth space in the treble, three octaves and a half![8]

And:

> Keys in which, to other bassoon players, passages are impracticable, are to him nothing; but not content with a facility or command within the bounds of former *fagotto*-music, he has extended his domain of flourish, and actually can arrive at will upon E-flat (4th space treble), and rest there as long as he pleases.[9]

Hearing the high-register timbre of a (full-sized) bassoon may not have been so commonplace in either London or Paris in 1830.

The fact that the renowned French woodwind maker Savary jeune produced a relatively large number of small-sized bassoons in the first half of the 19th century suggests that they may have been popular in France for a longer period, and players more inclined to use them. But there is also evidence of

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7 Donna Agrell, *Repertoire for a Swedish Bassoon Virtuoso: Approaching Early Nineteenth-century Works Composed for Frans Preumayr with an Original Grenser & Wiesner Bassoon*", PhD dissertation, Leiden University 2015, 57. Preumayr documented his European tour in a travel journal from 1829–30 and copied this report from the *Journal de debats*, Paris, 11 April 1830, 400–402. He was well known for his extraordinary facility in the high register; his father-in-law, the composer and clarinetist Henrik Crusell, exploited this capacity in his compositions, as did other composers such as Franz Berwald, Pierre Crémont, and Edouard Du Puy, who similarly dedicated works featuring this range to Preumayr.

8 Ibid., 66. From a review (anonymous), "Preumayr's Concert", *Morning Post* (London), July 20, 1830, issue 18597.

9 Ibid., 66. From a review by James Silk Buckingham, "Mr Preumayr's Concert", *Athenaeum* (London), July 24, 1830.

virtuosic soloists playing on small-sized bassoons in other countries, such as Valentin Czeyka (1769–1834), who performed his own compositions for tenor bassoon in Vienna, and the Neapolitan Giacomo Pagnoncelli (active 1837–1849), who is likewise documented as performing on the tenoroon.[10]

The Basel research team set about collecting titles of works that specify smaller bassoons, which included suggestions from several scholars, namely Klaus Hubmann, James Kopp and Steffen Voss. After examining works with this scoring, a review of repertoire with similar parameters was undertaken to consider what musical results could be attained. A thorough understanding of the different models of bassoons in their various sizes and transpositions, including knowledge of ranges and technical aspects, was required in order to make suggestions of repertoire suitable for performance.[11] In no way conclusive, an annotated list of suggested works was created and can be viewed on the project website or data repository.[12]

Range

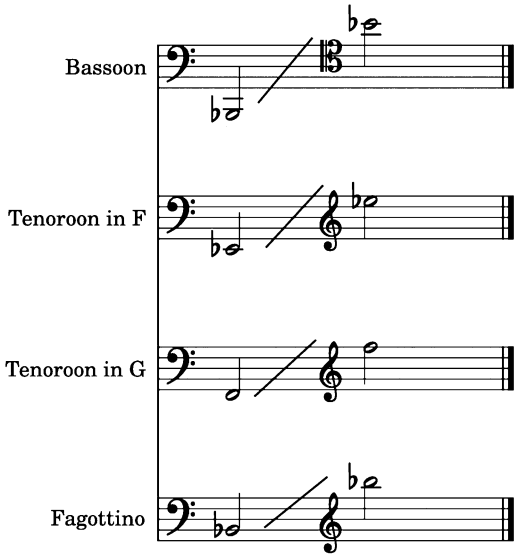
Eighteenth and nineteenth century bassoons generally have a range of three octaves or more, and the overlap with fagottini and tenoroons is substantial, as can be seen in Ex.1.

By reviewing passages in musical works which use the bassoon's highest register, and by observing the range limits of the various transposing instruments, an initial appraisal can be made. Roughly speaking, music written for the full-sized bassoon that lies above f′ or g′, as well as instances where prolonged passages are written in the tenor register, could be advantageously performed on a smaller instrument, while considering other factors such as tonality and setting.

10 See Giovanni Battista Graziadio's article in this volume.

11 Donna Agrell and Áurea Domínguez, "Repertoire Classification System / Repertoire Review: What was Written for Fagottino or Tenoroon?", https://www.historical-bassoon.ch/repertoire-classification-method/ (1 June 2023).

12 Project website: https://www.historical-bassoon.ch/music/ (10 June 2023); data repository: "Annotated, suggested repertoire for small-sized bassoons": https://admin.dasch.swiss/project/hp1UIqpKS_Kc7j0c5wh5jA/ontology/fagottino/InstrumentsRepertoire (10 June 2023).



Ex. 1: Approximate ranges of different-sized bassoons (sounding pitches).

The subject of range relating to bassoon size was considered by Hubmann in his article about Mozart's Sonata KV 292 (196c) for bassoon and violoncello.[13] He also noted similarities in the register of the bassoon lines in works by Georg Ritter, Franz Anton Pfeiffer, Karl Stamitz, and Freiherr Thaddäus von Dürnitz, suggesting that these may be appropriately played on the tenoroon. In 1990, and again in 2011, Hubmann called for a more thorough examination of bassoon repertoire to identify suitable repertoire for small-sized bassoons.

The difference of registers in Ex. 2 illustrates a comparison between the first bassoon part of Isidoro Rossi's *Terzetto I per tre Fagotti,* in its original version, and a transposition for tenoroon in F.[14] Although physically demand-

13 Klaus Hubmann, "Untersuchungen zur Authentizität der Mozartschen Fagottsonate KV 292 (196c)", in: *Oboe, Klarinette, Fagott* 5 (1990), 104–105. See also Hubmann, "Hoch gestimmte Fagotte" (n. 1), 78–82.

14 Consulted Edition: Isidoro Rossi, *Trio for three bassoons,* ed. by Helge Bartholomäus, Leipzig: Friedrich Hofmeister Musikverlag 1997. Original ms.: Biblioteca del Conservatorio di musica "Giuseppe Verdi" di Milano, Sig. A.35.49.4. Dedicated to Sig. Prof. Cav. Antonio Torriani (1829–1911).

ing to play continuously in the top register (ascending to c′′), as written in the Minuetto, it is theoretically not outside the range of later 19th-century instruments; a transposition from C major to G major using a tenoroon would, however, facilitate a performance in various ways, producing a lighter, more fluent and brilliant musical effect.

Tonalities and Transpositions

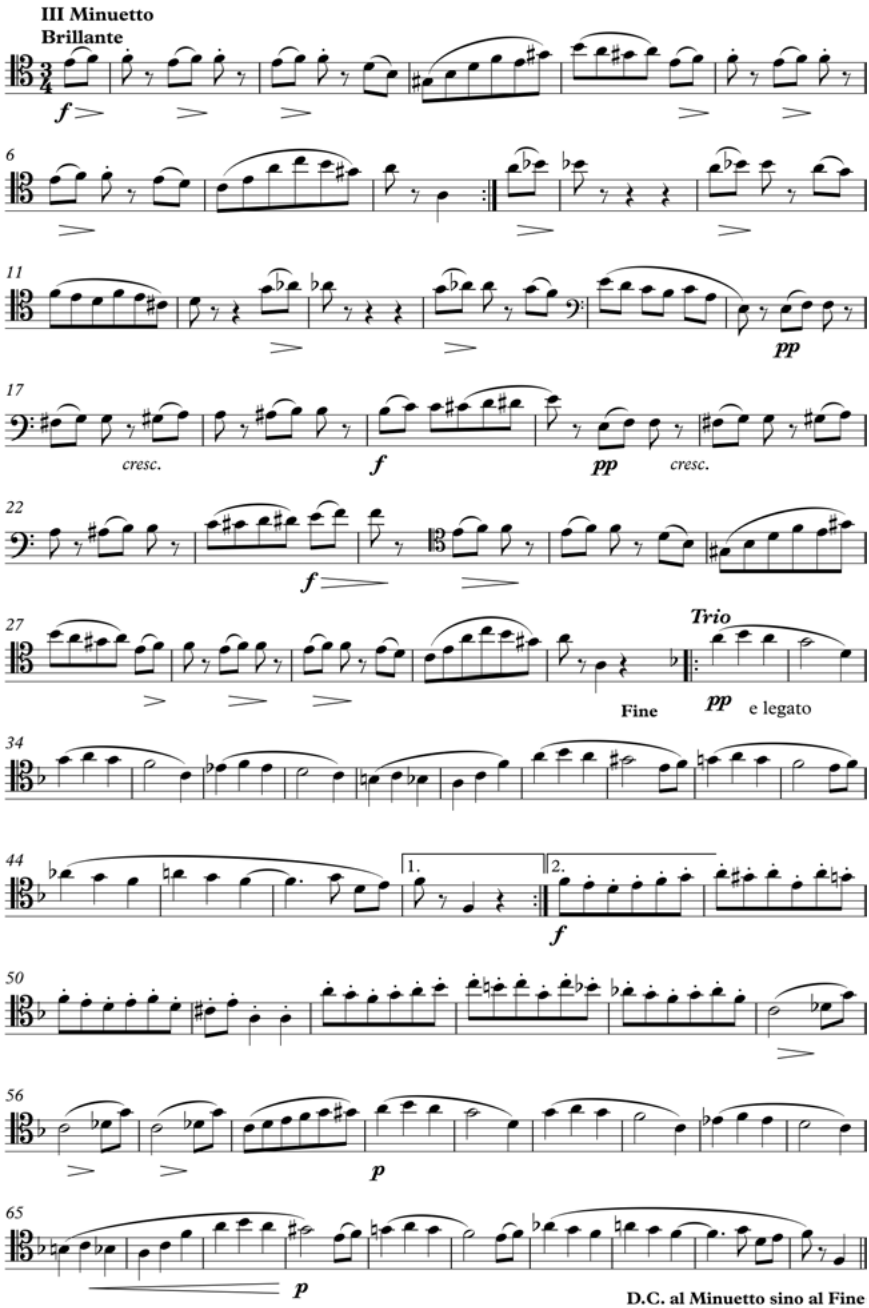
The tonalities used require careful consideration, particularly if certain high-register fingerings create technical obstacles. Unwieldy fingering combinations in keys with more than three sharps or flats can be avoided by using a transposing instrument, if other aspects, such as range, musical setting and details of articulation, dynamics and tempo markings, also favour this choice. An analysis of these components makes it possible to imagine what musical results can be arrived at using a smaller bassoon.[15]

Broadly speaking, the tenoroon in F favours tonalities with flats, such as F, B♭, E♭ major and D, G, C minor, and the tenoroon in G those with sharps, such as G, D, A major and B and E minor. But factors such as range and setting must also be considered.

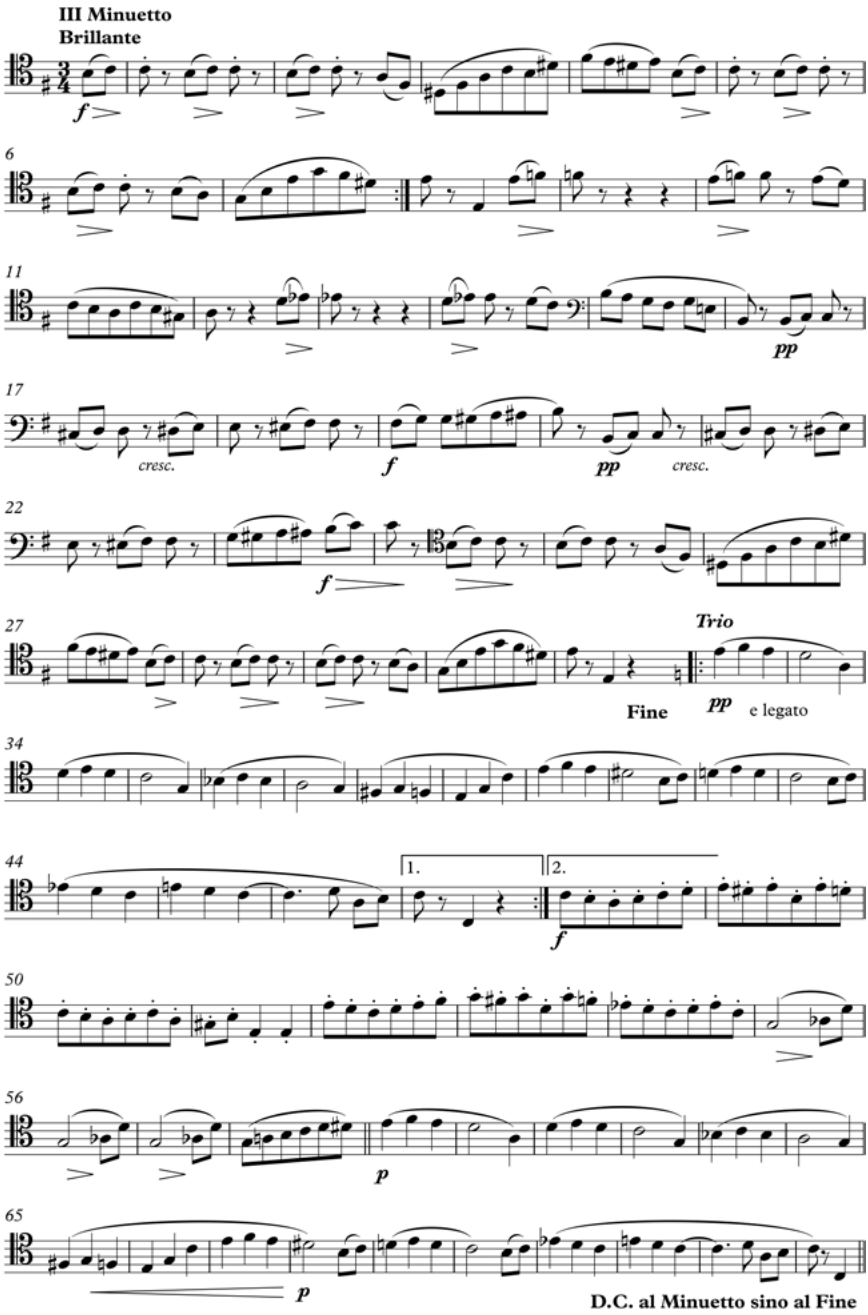
Various transposition tools can be used to eliminate the necessity of writing out new parts, such as reading in another clef and key signature. For example: to transpose a tenor clef part for full-size bassoon into notation for a tenoroon in G, one flat is added to the key signature, and the player reads/fingers 'as if' in bass clef. To do the same for a tenoroon in F, bass clef notation is read/fingered 'as if' in tenor clef (an octave lower), and one flat is removed from the key signature.

Fagottino parts notated in bass clef obviously require no transposition but sound an octave higher. If written in treble or alto clef, the player may read in soprano clef using fingerings for an octave lower, or alternatively transpose one step down and read 'as if' in bass clef. Notation in different pitches within one score has also been observed, and this was not uncommon historically. This situation can be attributed to various factors, such as an organ tuned differently than the strings and winds (as found in Telemann's cantata, *Mit Gott*

15 Agrell and Domínguez, "Repertoire Classification" (see n. 11).



Ex. 2a: Isidoro Rossi: Terzetto per tre Fagotti, III. Minuetto, Fagotto 1 in original key. Edition: Eva-Maria Hamberger.



Ex. 2b: Isidoro Rossi: Terzetto per tre Fagotti, III. Menuetto, Fagotto 1, transposed. Edition: Eva-Maria Hamberger.

im Gnaden-Bunde stehn), or winds playing at a lower pitch than strings (as in Zachow's cantata, *Dies ist der Tag*), both discussed below.

Musical examples

Friedrich Wilhelm Zachow (1663–1712)

An early example of a composition for small bassoons can be found in Friedrich Wilhelm Zachow's Easter cantata No X, *Dies ist der Tag,* written around 1700 in Halle and scored for soprano, alto, tenor, bass, two bassonetti, bassoon, two horns, strings, and basso continuo, as well as two oboes, not mentioned on the title page, which appear in one aria, as noted by Hubmann.[16]

Bassonetti are scored in treble clef, F major (Tiefer Kammerton), while the strings are notated in D major (Chorton). Of the eleven movements, five are scored for bassonetti, often written in thirds and taking obligato roles. A recorded performance of this work took place at the Händel Festspiele Halle in Weimar in May 2021, using the original fagottino FT40 and a 3D copy.[17]

Nicola Antonio Porpora (1686–1768)

Fagottino is notated in two arias by Nicola Antonio Porpora, a prolific Neapolitan composer of opera, in his score of *Siface.*[18] Also a renowned singing teacher, Porpora worked in London, Dresden and Vienna, as well as in his native country. He was reportedly a mentor to the young Haydn.[19]

16 Hubmann, "Hoch gestimmte Fagotte" (see n. 1), 75. Friedrich Wilhelm Zachow, Cantata *Dies ist der Tag*, Conservatoire royal de Bruxelles, Bibliothèque, 1008 (RISM ID no.: 706001182).

17 For a detailed discussion about this work, please see Zoë Matthew's article, "The Hamburg Link" in this volume. Zoë Matthews and Letizia Viola played fagottini in this performance, a part of which may be viewed in a trailer (with thanks to Ricardo Simian) at: https://youtu.be/ZWfM9Peg-Ok (1 June 2023).

18 Nicola Antonio Porpora, Opera *Siface*, Partial autog., Conservatoire royal de Bruxelles, Bibliothèque, 2298 (RISM ID no.: 700000221 – aria Act II, Scene 10 / 701001643 – aria Act III, Scene 1). There are two versions of *Siface* in multiple copies, dating from 1725 (Milan) and 1730 (Rome). The fagottino parts are identical.

19 The Porpora Project: https://www.porpora.co.uk/ (18 June 2023).

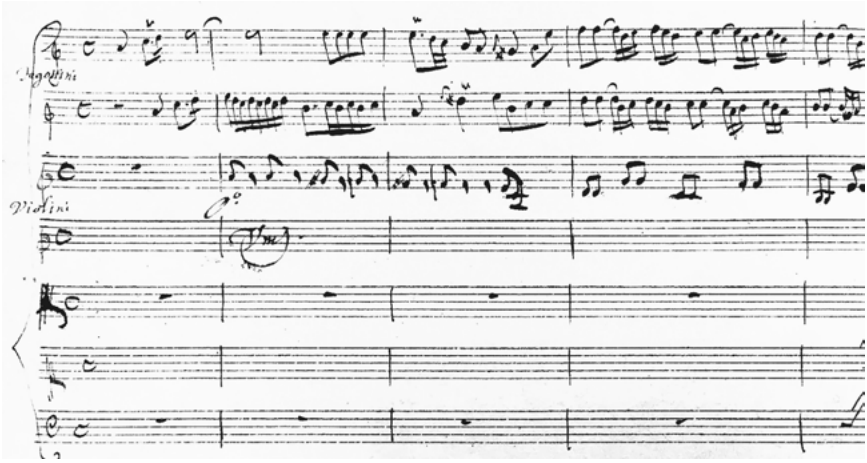


Fig. 1: Nicola Antonio Porpora, *Siface,* Act III, Scena I, detail (Fagottini), Conservatoire royal de Bruxelles, Bibliothèque. Public Domain Mark 1.0.

The aria "Giusti Numi" in Act 3, Scene 1, begins with two fagottini, playing a solemn, mournful melody in G minor accompanied by strings (Fig. 1). The timbre of the two alto-register instruments creates a particularly striking effect in this setting. The range required for this movement is a–e♭′ and, although not technically demanding, requires secure intonation control of the forked fingerings. These fingerings can be unstable, with b♭ tending to be too low and e♭ too high. When not playing melodically, the two fagottini join the bass part, sounding an octave higher.[20] Two boxwood copies of the FT30 Scherer fagottino (prototype and final model) were used to perform this aria in a lecture-recital at a conference in Geneva.[21]

20 See the discussion about the changing of functions in Giovanni Battista Graziadio's "The range: a case study in Neapolitan repertoire": https://www.historical-bassoon.ch/the-range-a-case-study-in-neapolitan-repertoire/ or alternatively: https://admin.dasch.swiss/project/hp1UIqpKS_Kc7j0c5wh5jA/ontology/fagottino/Documents (1 July 2023).

21 Giovanni Battista Graziadio and Carlos Bertão played fagottini (FT30 replicas in wood), with an ensemble from the Haute école de musique de Genève on 2 July 2023, at the 20th Biennial International Conference on Baroque Music, HEM Genève.

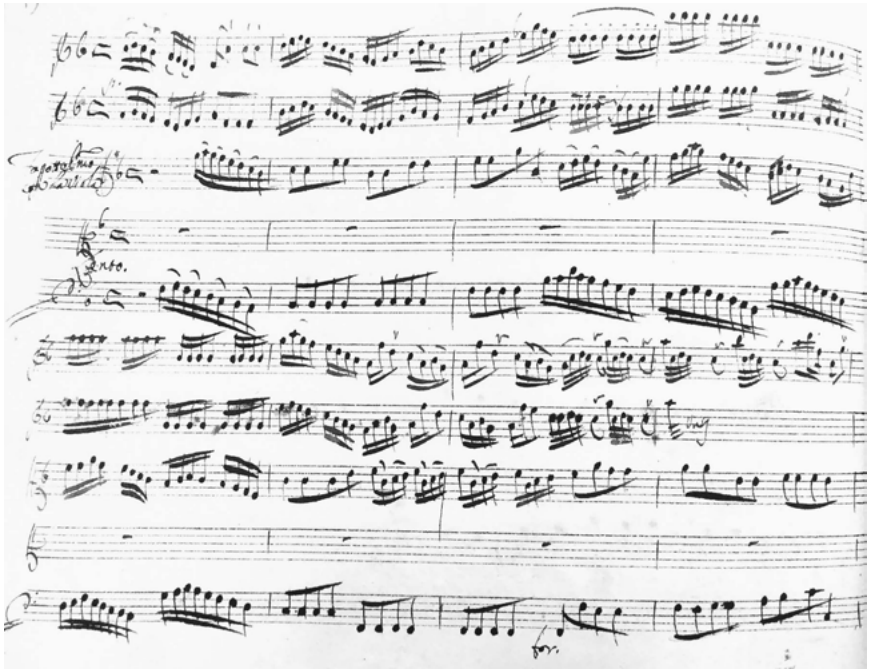


Fig. 2: Nicola Antonio Porpora, *Siface,* Act II, Scena 10, detail ("Fagottino con la Viola"), Conservatoire royal de Bruxelles, Bibliothèque. Public Domain Mark 1.0.

In Act II, Scene 10, instructions are given in the first bassoon part to play "con la Viola" where it reaches out of 'normal' range to a high c″. It is likely that the performer would have used a fagottino in this aria as well, due to the dynamic and technical requirements of this delicate setting, scored in the top register; the accompanying function would clearly be more feasible on a smaller instrument.[22]

22 See the annotation about this work in the suggested repertoire list: https://ark.dasch.swiss/ark:/72163/1/0845/LLLHpflsTCmXK2IB1dNUiAD.20230515T10374925417693Z (8 July 2023).

Georg Philipp Telemann (1681–1767)

Bassonetti or fagottini are scored in several works by Georg Philipp Telemann, as for example in the cantata *Mit Gott im Gnaden-Bunde stehn,* TWV 1:114.[23] This work is written for soprano (solo), alto, tenor, and bass (solo), with pairs of oboes, horns, bassonetti or chalumeaux, along with strings and basso continuo.[24] As was common practice, the bassonetti/chalumeaux parts are written in bass clef, indicating that bassoon players could perform these using 'normal' bassoon fingerings, but sounding an octave higher than notated (Fig. 3). Generally, the fagottini augment the dense tutti texture and add an overall sonorous effect while playing in unison in the same middle register as the oboes, violins, violas, and horns.

The most notable writing in this work is found in the duet for soprano and bass, "Läutet nur die Sterbeglocken" (Fig. 4). Here the pair of bassonetti play an insistent, alternating 16th-note arpeggiated figure throughout the 'A' section, depicting the ticking of a clock. Meanwhile, the other wind parts play static, staccato rhythms and the strings play pizzicato, producing a vivid simulation of the tolling of "Sterbeglocken" (death chimes).[25] The bassonetti are the only wind instruments that double the chorale theme in the 'B' section, in

23 Georg Philipp Telemann, Cantata *Mit Gott im Gnaden-Bunde stehn*, Ms copy SA 657, Berlin, Sing-Akademie zu Berlin, Notenarchiv, (RISM ID no.: 469065700). Today in: Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Musikabteilung. This cantata was performed by Hugo Rodríguez Arteaga and Donna Agrell (using 3D copies of FT30), with an ensemble from the Schola Cantorum Basiliensis, led by Andrea Buccarella at the symposium "Forgotten relatives: Small bassoons of the 18th and 19th centuries on stage again", on 24 February 2023, in Basel.

24 The basso continuo and bass singer's parts are notated in E major, while the rest are written in G (with transposed parts for horns in C). This practice can be explained by the fact that the pitch of the organ at the place of performance was a third higher than that of the wind instruments.

25 Hans-Werner Boresch, "Sterbeglocke oder Vogelgesang? Der Eingangssatz von Johann Sebastian Bachs Kantate BWV 8 und die Tradition des *Locus Amoenus*", in: *Archiv für Musikwissenschaft* 80 (2023), 64. Boresch cites Martin Staehelin's study of the connection between the use of different types of motifs for the ringing of death chimes and the passage of time in Johann Sebastian Bach's cantatas.

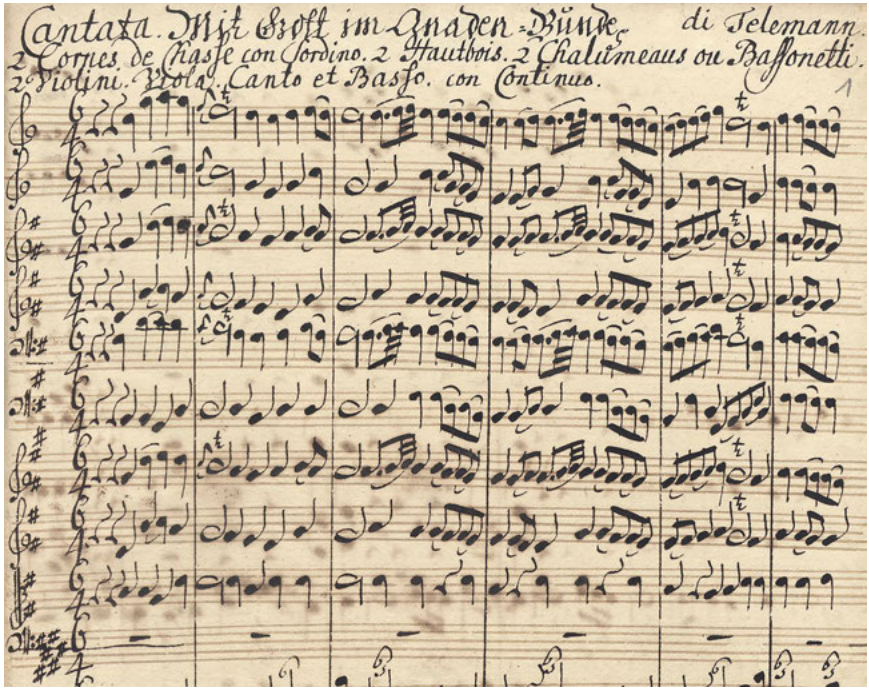


Fig. 3: Georg Philipp Telemann, *Mit Gott im Gnaden-Bunde stehn* (TWV 1:1141), title page, Staatsbibliothek zu Berlin – Preußischer Kulturbesitz. Public Domain Mark 1.0.

unison with the strings and vocal lines, and were perhaps chosen for this task because of their rich overtones.

Another Telemann cantata, *Abscheuliche Tiefe des grossen Verderbens* for Flute, Violetta o Fagotto, Voice and Continuo TWV1:1, written in Hamburg in 1731–1732, does not specify a smaller bassoon in the score, although the music clearly lies out of the range of a full-sized instrument if played in the written octave, notated in alto clef. Here the bassoon plays an obligato melodic role, often in octaves with the flute.[26]

26 Georg Philipp Telemann, Cantata *Abscheuliche Tiefe des großen Verderbens* (TWV 1:1), Cantata on Sunday after Christmas, from: *Fortsetzung des Harmonischen Gottesdienstes oder geistliche Kantaten* […], Hamburg: author [1731], strumento primo part, p. 56, D-Hs M C/349: St; digitized: https://digitalisate.sub.uni-hamburg.de/recherche/detail?tx_dlf%5Bid%5D=46992&tx_dlf%5Bpage%5D=62&tx_dlf_navigation%5Baction%5D=

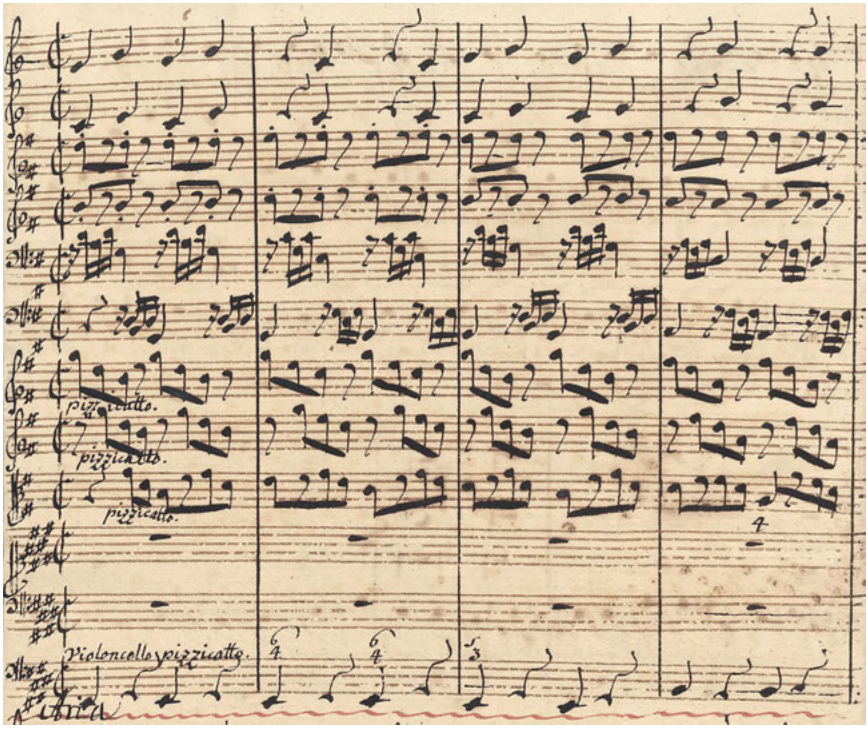


Fig. 4: Georg Philipp Telemann, *Mit Gott im Gnaden-Bunde stehn* (TWV 1:1141), Duet for soprano and tenor, "Läutet nur die Sterbe Glocken", detail, Staatsbibliothek zu Berlin – Preußischer Kulturbesitz. Public Domain Mark 1.0.

main&tx_dlf_navigation%5Bcontroller%5D=Navigation&cHash=e297c19442b4eeefa85cd0fbce2fe3b8 (25 November 2023).

For a more detailed discussion of this work, see Zoë Matthew's article, "The Hamburg Link", in this volume. A performance of this work with Matthews playing fagottino may be viewed at: https://youtu.be/wGbcrgxU-0s (25 May 2023).

Ludwig van Beethoven (1770–1827)

An early Beethoven work, the *Trio for Flute, Bassoon and Piano* (1786), is often referred to as an illustration of how a tenoroon in G may be effectively used.[27] The second movement, Adagio, begins in a fragile, soft dynamic with an ornament on g′, which is repeated in the third bar, ascending to c″ (Fig. 5). The fingering combinations required to execute this passage precisely and softly are challenging and would have hardly been possible for the amateur nobleman for whom the piece was composed, if indeed he was using a full-sized instrument from the 1780s.[28]

If played on a G tenoroon, however, the effect is fluid; control of the timing of the ornament and of the dynamics is greatly increased, as the line then lies comfortably in the middle register. Transposition is unnecessary if the part is written in tenor clef; it can be read as if it were in bass clef, using the corresponding fingerings and changing the key signature from C minor to G minor.[29]

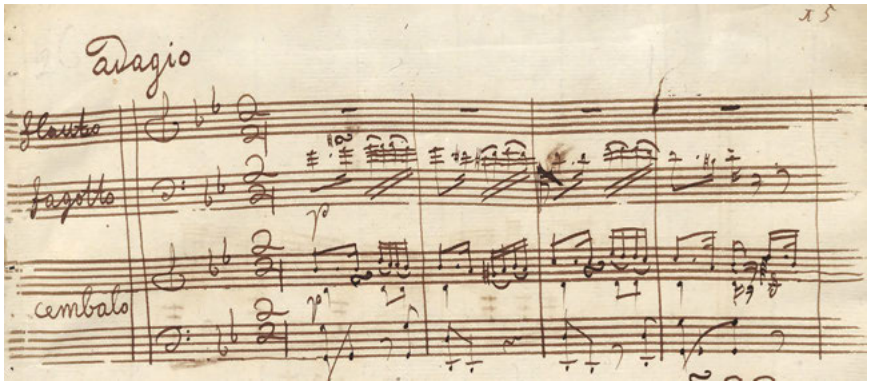


Fig. 5: Ludwig van Beethoven, Adagio from *Trio for Piano, Flute, and Bassoon,* WoO 3, detail, Staatsbibliothek zu Berlin – Preußischer Kulturbesitz. Public Domain Mark 1.0.

27 Ludwig van Beethoven, Trio for Piano, Flute, and Bassoon, WoO3, Berlin, Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Mus.ms.autogr. L. v. Beethoven Grasnick 31 (RISM ID no.: 464001742).

28 Kopp, *The Bassoon* (see n. 1), 225.

29 Letizia Viola performed this movement on the FT6 Anonymous (original) tenoroon in G on several occasions, including the symposium "Forgotten relatives: Small bassoons of the 18th and 19th centuries on stage again" on 24 February 2023, in Basel. See an earlier

François René Gebauer (1773–1845)

François René Gebauer, a prominent bassoonist and professor in Paris in the 19th century, wrote prolifically for woodwinds. The virtuoso Frans Preumayr from Stockholm referred to him as "*le père des bassons*", and vividly described attending chamber music sessions coupled with Sunday afternoon meals at Gebauer's home in 1830.[30] Some of his chamber music works for bassoon, such as his *12 Duos Concertantes for Two Bassoons*, op. 44 or *Twelve Trios for Three Bassoons,* op. 33, are particularly well-suited for performance with small-sized instruments.[31] A good example is found in the first bassoon part of the *Trio Nr. 2* in G minor; written entirely in the middle/upper register, it could easily be played on a tenoroon in F, in the key of D minor.

Isidoro Rossi (1815–1884)

Isidoro Rossi dedicated his *Terzetto I per tre Fagotti* to Antonio Torriani, principal bassoonist at La Scala for almost forty years (starting in 1864) and professor at the conservatory until 1908.[32] This lively, four-movement work, scored for three bassoons, is a showpiece for professional players; the virtuosity required in the high register of the first voice suggests the use of a tenoroon in F.

Although originally composed for the full-sized instrument, a performance using a tenoroon in F is an appropriate option which could achieve a lighter and more virtuosic effect. The complicated fingering combinations required by an abundance of high notes, which centre around c″, are advantageously placed a fourth lower in the fingering system on the tenoroon (see the comparison of parts in Ex. 2). The dynamic balance in this trio may be prob-

video performance also: "A taste of Beethoven with tenoroon", https://www.historical-bassoon.ch/other-videos/ (23 September 2023).

30 Agrell, *Repertoire for a Swedish Bassoon Virtuoso* (see n. 7), 40–42, 58–59.

31 Editions consulted: François-René Gebauer, *Trio Nr. 2 in g-moll*, ed. by Jean-Christophe Dassonville, Warngau: Accolade Musikverlag 1999 (ACC. 4090), and François-René Gebauer, *12 Duos concertantes,* Vol 1–4, Warngau: Accolade Musikverlag 2000 (ACC. 2005A), 2004 (2005B, 2005C, 2005D).

32 Rossi, *Trio*, ed. 1997 (see n. 14) and Andrea Toschi, "Antonio Torriani and the XIX Century Milanese Bassoon School", in: *Journal of the International Double Reed Society* 26 (July 1998), 93–97.

lematic if played by a tenoroon and two bassoons, as the larger instruments may overpower the lighter-sounding tenoroon; care must therefore be taken to adjust to this factor. A performance of this work was given at the symposium "Forgotten relatives: Small bassoons of the 18th and 19th centuries on stage again".[33]

With the emergence of more information about the history and function of small-sized bassoons from the 18th and 19th centuries, a broader discussion is evolving regarding their inclusion in performance and pedagogy. Outcomes of organological, musical and pedagogical research generated by the two SNSF projects, based on groundwork done by Hubmann, Kopp and others, provide a foundation of expertise for future researchers, performers, and teachers alike.

The necessary and long overdue re-evaluation of bassoon repertoire in order to determine what works could include fagottino and tenoroon can be made by systematically reviewing parameters such as range, transposition, tonality and musical setting. By exploring comparisons of timbre, creative musical choices can generate further options in how these instruments can be used. The common historical practice of composing arrangements of period works, such as the opera potpourri so popular in the 19th century, could even be revived.

The small, forgotten relatives have returned, and will take their rightful place at the table alongside the many-sized historical woodwinds already seated.

33 Letizia Viola used a maple copy of the FT42 Savary jeune tenoroon for the concert on 24 February 2023 in Basel.

The Hamburg Link

Zoë Matthews-Visentin

This article presents evidence of the use of small bassoons in Hamburg in the 18th century and explores the terminology used for these instruments. Furthermore, key repertoire confirming their existence also suggests their use in other works requiring multiple bassoons. Eighteenth century Hamburg was a cultural hub attracting many composers, both visiting and resident, who exchanged ideas, theories, and influences from across Europe. One significant place where these artists met was the Hamburg Opera Theatre, or Gänsemarkt Theater; Keiser, Mattheson, Handel, Telemann and Graupner are just a few of the musicians known to have worked and met there. The repertoire discussed in this article is only an indicator of the possible further use of small bassoons in this northern German region. The terminology used for these instruments is varied, and, as in the case of the full-size bassoon, not consistent.

Halle and Leipzig were also important musical cities in the 18th century, with many composers first studying there before ending up in Hamburg. Reinhard Keiser and Christoph Graupner both studied with the composer Johann Kuhnau in Leipzig, and later collaborated on six operas at the Hamburg Opera. A work for fagottino recently mentioned by Klaus Hubmann in his paper presented at the SNSF Fagottino Symposium provides a link to Hamburg through Kuhnau.[1] Kuhnau's cantata, *Gott sei mir gnädig nach deiner Güte à 9,* includes a fagottino part marked "Fagottino ó Viola da gamba 1a.", which belongs to an unknown sonata, interwoven into the cantata, but not mentioned on the title page.[2]

1 Klaus Hubmann, "Überlegungen zu Herkunft, Verbreitung und Repertoire des hochgestimmten Dulzians", paper at symposium: *Forgotten relatives – small bassoons of the 18th and 19th centuries on stage again*, Basel: Schola Cantorum Basiliensis (24 February 2023).

2 Johann Kuhnau, *Gott sei mir gnädig nach deiner Güte à 9*, Sammlung Fürsten- und Landesschule Grimma, MS Mus. 2133-E-507 (RISM ID no.: 211004731).

Friedrich Wilhelm Zachow also educated several notable composers in Halle, the most famous of whom was Georg Friedrich Handel, who in 1702 took on the post of organist at the Halle Dom, where Zachow was the cantor. Handel is known to have used parts of Zachow's compositions in his own works and was highly influenced by him. In 1703, Handel went to Hamburg to take up a position as violinist and harpsichordist in the Hamburg Opera, where he composed several operas and met Mattheson, Keiser and Graupner.

Born in Hamburg, Mattheson was a leading figure in its cultural scene. Starting from a young age, he worked for most of his life at the Opera and wrote theoretical works about music. At the same time, he had a career as a diplomat, and from 1718 until 1728 was cantor of the Hamburg Dom, until Keiser replaced him. Mattheson composed eight operas as well as numerous cantatas and oratorios, one of which, *Das Große in dem Kleinen* (1722), is a significant work indicating small bassoon use within Hamburg.[3]

Table 2 presents a list of key repertoire for small-sized bassoons, and the assortment of terminology used throughout these works.[4] The two main terms, "Bassonetto", "Fagottino" and their plural forms, refer to octave-size instruments, the most commonly-found size of instrument in the early 18th century. There are also two works on this list which use the term "Fagott" or "Fagotto": the Telemann cantata, *Abscheuliche Tiefe des grossen Verderbens*, and Graupner's *Die Liebe sey nicht falsch,* both of which score the bassoon parts in alto clef.

Four of the works in Table 2 make use of the term "Bassonetto" or "Bassonetti." One work using bassonetti is Johann Georg Hoffmann's *Concerto à 2 Viole d'Amore, 2 Bassonetti e Basso*.[5] Hoffmann was a composer, organist and cantor in Breslau [today: Wrocław, PL] and became responsible for Italian

3 Johann Mattheson, Oratorio *Das Große in dem Kleinen*, original and digital provision, Hamburg, Staats- und Universitätsbibliothek Carl von Ossietzky, Musiksammlung, ND VI 142, (RISM ID no.: 452500986).

4 For detailed information about the repertoire for small bassoons see: https://admin.dasch.swiss/resource/0845/LLLHpflsTCmXK2IB1dNUiA?version=20230515T10374925417693Z.

5 Johann Georg Hoffmann, *Concerto à 2 Viole d'Amore, 2 Bassonetti e Basso,* in: *Verzeichniß Musikalischer Werke* […] *bey Joh. Gottlob Immanuel Breitkopf in Leipzig*, Erste Ausgabe, Leipzig, in der Michaelmesse 1761, 54.

Table 1: Chronological table of composers and compositions with use of small bassoons, 1680–1770.

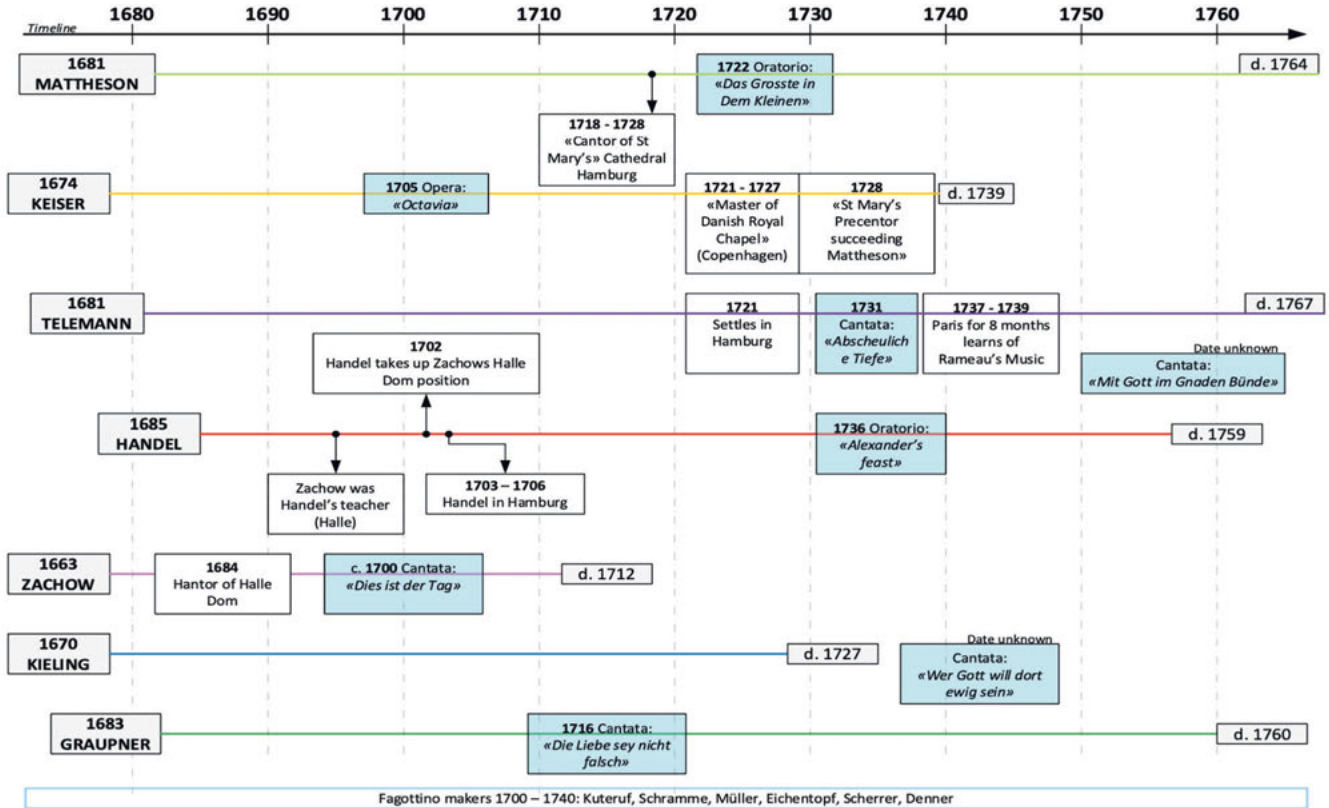


Table 2: Repertoire with links to Hamburg and terminology of small bassoons.

COMPOSER	TITLE	DATE / PLACE	TERMINOLOGY
GRAUPNER, Christoph	*Die Liebe sey nicht falsch*	1716	Fagott
HOFFMANN, Johann Georg	*Concerto à 2 Viole d'Amore, 2 Bassonetti e Basso*	Unknown	Bassonetto
KEISER, Reinhard	*Die verliebte Diana #4, "Philomile, deinen Willen zu erfüllen"*	1698	Fagotto
KIELING, Johann Cyriacus	*Wer Gott will dort ewig sehen*	Unknown, Stollberg?	Bassonetto
KUHNAU, Johann	*Gott sei mir gnädig nach deiner Güte à 9*	1705/1716/1722	Fagottino
MATTHESON, Johann	*Das Große in dem Kleinen*	1722, Hamburg Dom	Fagottino / Fagottini / Fagotti
TELEMANN, Georg Philipp	*Abscheuliche Tiefe des grossen Verderbens (TWV 1:1)*	1731/32, Hamburg	Fagotto / Fagotti
TELEMANN, Georg Philipp	*Mit Gott im Gnaden-Bunde stehn (TWV 1:1141)*	1725–50 (ca.)	Bassonetto
TELEMANN, Georg Philipp	*Concerto à 2 Oboe d'Amore, 2 fagottini e basso*	Unknown	Fagottino
ZACHOW, Friedrich Wilhelm	*Dies ist der Tag*	c. 1700, Halle	Bassonetto / Basson

opera there in 1727. Hoffmann's reports of opera performances in Breslau in 1740 were used by Mattheson in his *Grundlage einer Ehren-Pforte*.[6] In 1752, Hoffmann was admitted as a member of the *Correspondierende Societät der musicalischen Wissenschaften*, a society founded in 1738, joining Telemann, Handel, and Bach, amongst others.[7]

6 Johann Mattheson, *Grundlage einer Ehren-Pforte*, Hamburg: Johann Mattheson, 1740; Facs. ed. by Max Schneider, Kassel: Bärenreiter 1969, 115.

7 Josef Focht, article "Hofmann (Hoffmann), Johann George" (1700–1780), in: *Bayerisches Musiker-Lexikon online*, https://bmlo.de/h2129, version from 15 June 2017; see also https://de.wikipedia.org/wiki/Johann_Georg_Hoffmann_(Komponist) (24 October 2023).

An early work making use of two bassonetti is Zachow's Easter Cantata *Dies ist der Tag,* composed around 1700.[8] Although not composed in Hamburg itself, it shows a similarity in instrumentation to two other cantatas, one by Telemann, *Mit Gott im Gnaden-Bunde stehn*[9]*,* and Kieling's *Wer Gott will dort ewig sehen*[10]. These cantatas often use horns and bassonetti together, or, in the case of Kieling, bassonetti *or* horns, meaning the bassonetti could take on a horn-like role.

Friedrich Wilhelm Zachow: ***Dies ist der Tag***

1. Aria Tenor [& Tutti] – 2 horns, **2 bassonetti**
2. Recit. Canto
3. Aria Canto (B. C. only)
4. [Accompagnato] Basso – 2 horns, **2 bassonetti**
5. Recit. Canto
6. Tutti – 2 horns, **2 bassonetti**
7. Recit. Canto
8. Aria Canto – **2 bassonetti**
9. Aria Tenor – 2 oboes in unison
10. Recit. Canto
11. Tutti – 2 horns, **2 bassonetti**

Zachow writes for bassonetti in five of the eleven movements of his cantata. It is likely that "bassonetti" were octave fagottini, pitched in tief-Kammerton. Due to the low pitch used for both bassonetti and oboe parts, and the fact that Zachow uses the French terms "Hautbois" and "Basson", it is improbable that small dulcians were intended. The bassonetti parts are written in F major and the strings and basso continuo parts in D major, which is also the case in Tele-

8 Friedrich Wilhelm Zachow, Cantata *Dies ist der Tag*, Conservatoire royal de Bruxelles, Bibliothèque, 1006-1008 (RISM ID no.: 706001182).

9 Georg Philipp Telemann, Cantata *Mit Gott im Gnaden-Bunde stehn* (TWV 1:1141), Sing-Akademie zu Berlin, Notenarchiv SA657, (RISM ID no.: 469065700).

10 Johann Cyriacus Kieling, Cantata *Wer Gott will dort ewig sehen*, Niedersächsische Staats- und Universitätsbibliothek, Göttingen, 8° Cod. Ms. philos. 84e: Kieling 16 (RISM ID no.: 453000427).

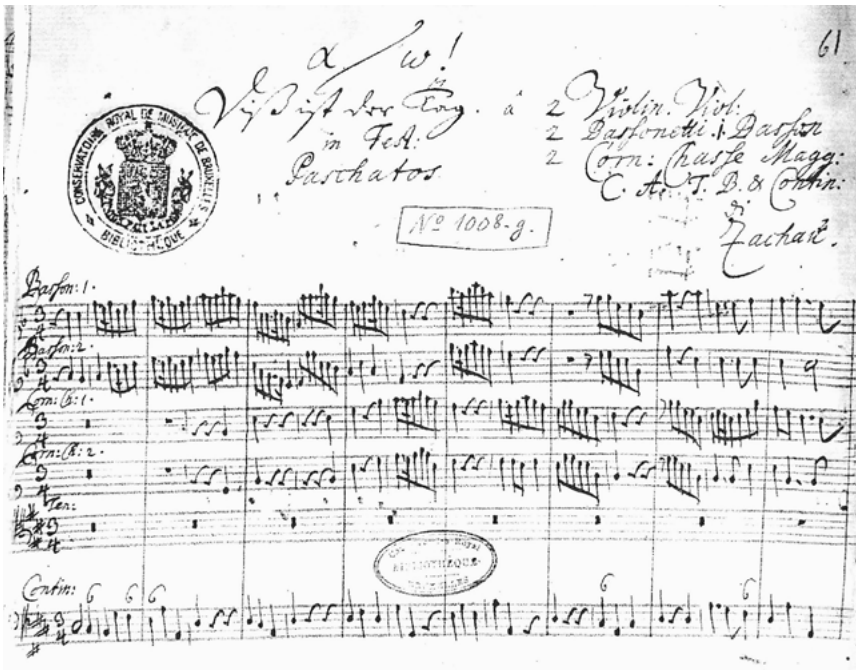


Fig. 1: Friedrich Wilhelm Zachow, Cantata *Dies ist der Tag,* title page, Conservatoire royal de Bruxelles, Bibliothèque, 1008. With permission.

mann's cantata *Mit Gott im Gnade-Bunde stehn,* where the bassonetti parts are written in G and the organ in E major.[11]

The first page of the manuscript of *Dies ist der Tag* offers an interesting insight into the terminology used at that time (Fig. 1). In the top right-hand corner of the manuscript, Zachow lists the instruments as: 2 violins, viola, 2 bassonetti or bassoon, 2 horns, voices and continuo. In the first two staves, however, he refers to the two bassonetti simply as "Basson 1" and "Basson 2".

In May 2021, members of the of SNSF research project were invited to perform this cantata with Cantus Thuringia in Weimar, as part of the Händel Festspiele Halle. For this performance, the original anonymous instrument

11 See also Donna Agrell's chapter in this volume.

Fig. 2: FT40 Anonymous (11) 4-key fagottino, ca. 1750–1790. Photo: Zoë Matthews-Visentin.

FT40 (Fig. 2) and one of its 3D copies were used. This performance opportunity allowed us to make some interesting observations.[12]

Notably, the oboes that appear in unison in the tenor aria No. 9, but nowhere else, are not mentioned in the instrumentation indicated at the beginning. Hans Oskar Koch surmised that the bassonetti parts were probably

12 The bassonetti were played by the author and Letizia Viola. See a trailer (with thanks for Ricardo Simian) containing parts of this performance at: https://youtu.be/ZWfM9PegOk?si=aDTzobjAyjReDA5f (1 June 2023).

played by oboists who changed instruments.[13] Our performance experience suggests that this seems unlikely, as the two obligato arias, No. 8 for soprano and bassonetti, and No. 9 for tenor and unison oboes, follow each other with no recitative in between. It would require a substantial pause between the two arias to change instruments/reeds and to then begin a very exposed virtuosic aria, which reaches c''' on the oboes, written in unison. Both movements demand precise playing, on both the bassonetti and oboes, in difficult, exposed arias. The technique and reeds needed for these instruments are very different from one another.

In the tutti choral movements No. 6 and No. 11, it seems likely that both bassonetti and oboes would have played. When looking at Zachow's choral movements in other cantatas, it can be assumed that the oboes would often double the soprano and alto vocal lines. Zachow does not indicate instrumentation in the choral movements, he simply writes "Tutti". An argument in favour of oboes being played there is that they would double soprano and alto lines (d'–c'''), whereas the bassonetti would sound an octave lower (d–c'') than notated. Zachow writes the bassonetti parts in this manner throughout the entire cantata, however, giving no clue as to possible instrumentation in the tutti choral movements. Another reason to include the bassonetti in the choral movements is the nature of the parts themselves: although there is frequent doubling of the vocal lines, there are also "call and response" sections interacting with the horns, a compositional device which Zachow uses throughout the obligato bassonetto movements. In the highlighted section (Fig. 3) of the sixth movement, the bassonetti (upper two lines) and horns (lower two lines) do not double the vocal lines but interact with both the string parts and the theme in the horns.

Telemann also uses the term bassonetti to refer to small-size bassoons; the cantata *Mit Gott im Gnaden-Bunde stehn*[14] (Fig. 4) is similar in instrument-

13 Hans Oskar Koch, *Sonderformen der Blasinstrumente in der deutschen Musik vom späten 17. bis zur Mitte des 18. Jahrhunderts*, Diss. Universität Heidelberg 1980, 133–134.

14 This cantata was performed in Basel at the symposium "Forgotten relatives: Small bassoons of the 18th and 19th centuries on stage again" on 24 February 2023, using two 3D copies of FT30 Scherer fagottino. Hugo Rodríguez Arteaga and Donna Agrell played fagottini in this work, together with an ensemble from the Schola Cantorum Basiliensis, led by Andrea Buccarella (see n. 9).

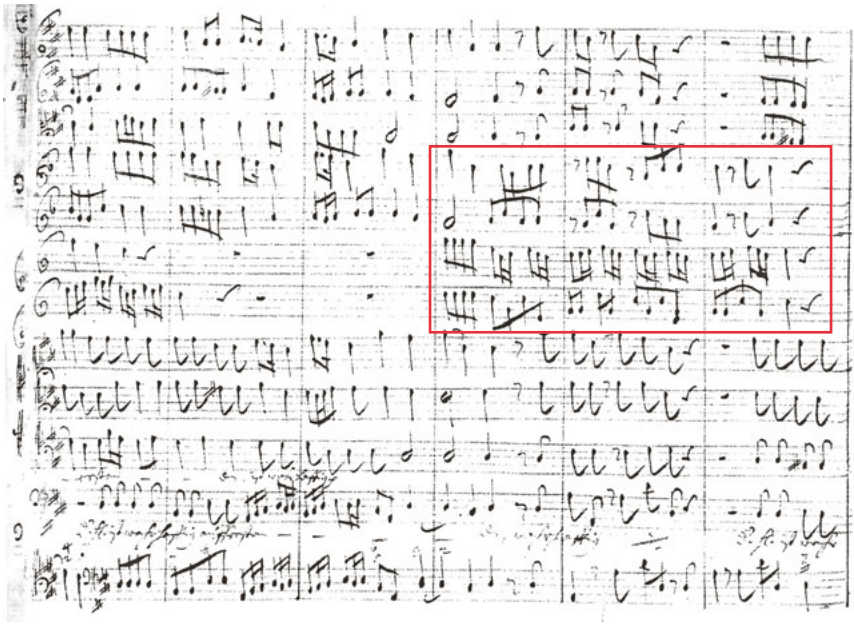


Fig. 3: Friedrich Wilhelm Zachow, *Dies ist der Tag,* No. 6 Tutti (page 8), Conservatoire royal de Bruxelles, Bibliothèque, 1008. With permission.

ation to Zachow's cantata, which is scored for two horns, two oboes, two bassonetti or chalumeaux, strings, continuo, and voices.

The bassonetti, oboes and upper strings are written in G major, suggesting the upper strings are tuned to the same pitch as the winds; the *violono* part in bass clef is likewise in G. On the other hand, the canto and basso continuo lines are written in E major, demonstrating the difference in pitch of the organ being used at the time. Unlike Zachow's and Kieling's cantatas, in which the bassonetti parts are notated in treble clef, Telemann uses bass clef for the bassonetti parts, an octave below their sounding pitch.

Georg Philipp Telemann, *Mit Gott im Gnaden-Bunde stehn*

1. Aria Basso – **2 bassonetti**
2. Recit. Canto
3. Aria Canto – **2 bassonetti**
4. Recit. Basso

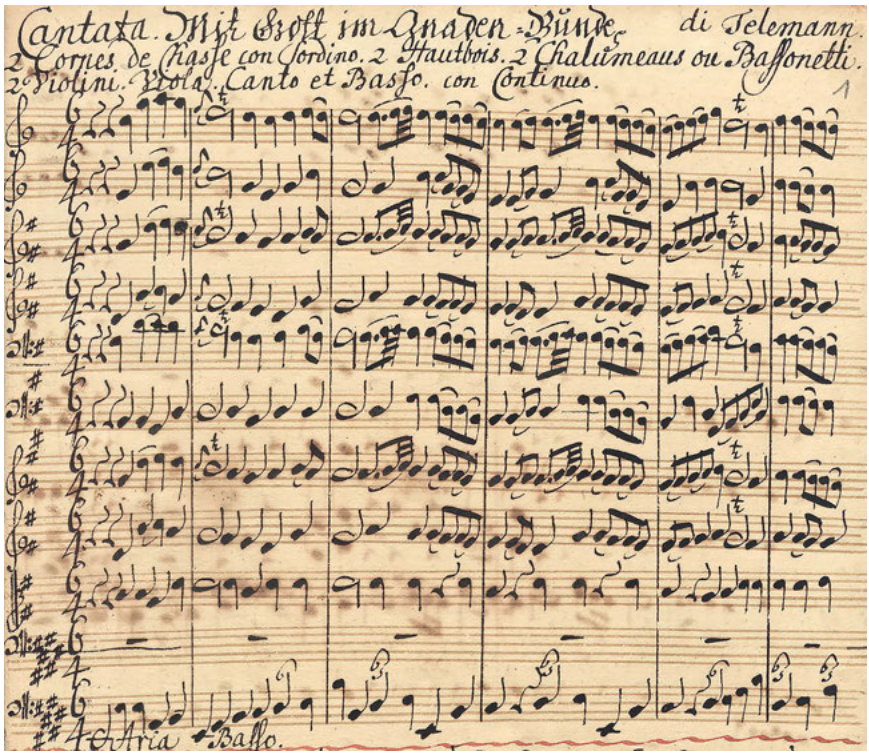


Fig. 4: Georg Philipp Telemann, Cantata *Mit Gott im Gnaden-Bunde stehn* (TWV 1:1141), No. 1 Aria (Basso), title page, Staatsbibliothek zu Berlin – Preußischer Kulturbesitz. Public Domain.

5. Aria (Duet Canto and Basso) – **2 bassonetti**
6. Choral (Canto, Basso) – **2 bassonetti**

The bassonetti play in all the arias and have independent roles, accompanying the oboes and horns in the A sections only. The exception to this is found in No. 5, Duet for Canto and Basso: in the A section, the horns and oboes play a simple accompaniment, and the bassonetti have sixteenth-note figures which play above a carpet of pizzicato notes in the strings; in the B section, florid melismatic lines in the two vocal parts are accompanied by both the bassonetti and strings, playing a choral-like line in unison. The final choral does not appear in the manuscript score and is only found in the instrumental and vocal parts.

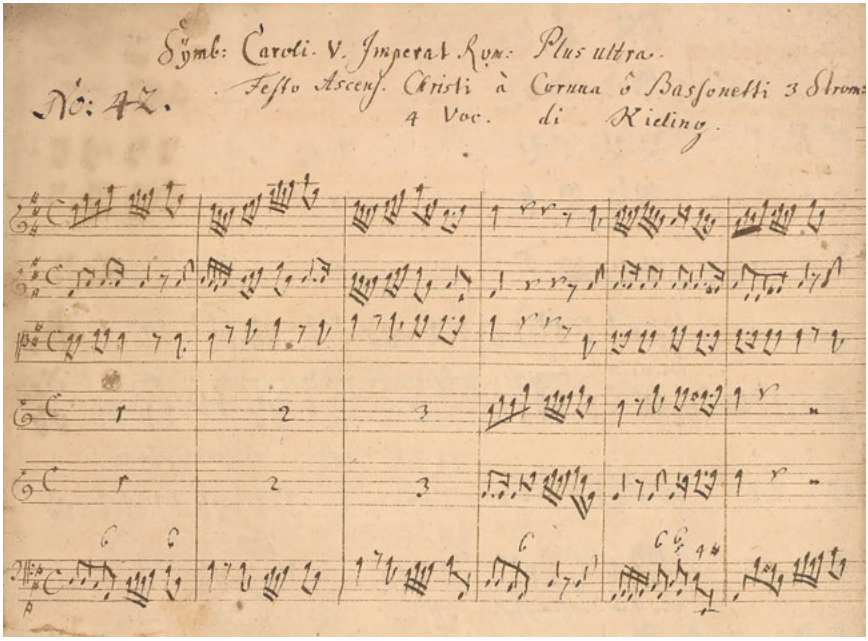


Fig. 5: Johann Cyriacus Kieling, Cantata *Wer Gott will dort ewig sehen,* title page, Niedersächsische Staats- und Universitätsbibliothek, Göttingen, 8° Cod. Ms. philos. 84e: Kieling 16. With permission.

Kieling's cantata *Wer Gott will dort ewig sehen* from 1728 (Fig. 5) uses similar instrumentation to those of Telemann and Zachow.[15] Little is known about Kieling other than the fact that he was born in Bennungen and worked from 1712 as cantor in Brücken and in Stollberg (Harz), near Halle.[16] Given their geographical proximity, it seems that Kieling and Zachow could have been aware of each other's works and therefore also of their respective use of bassonetti.

15 Kieling, *Wer Gott* (see n. 10). The manuscript is dated one year after his death in 1727. One can only guess whether this was a copy made by someone else, or if he had planned a performance of the work in 1728 which never took place.

16 Ernst Ludwig Gerber, *Neues historisch-biographisches Lexikon der Tonkünstler,* Bd. 3, Leipzig: A. Kühnel 1813, col. 42.

Johann Cyriacus Kieling, *Wer Gott will dort ewig sehen*

1. Chorus CATB – **2 bassonetti**
2. Recit. Tenore
3. Aria Soprano (Canto) – **2 bassonetti**
4. Recit. Bass
5. Tutti Chorus CATB – **2 bassonetti**

The term "fagottino" is probably the clearest term. The most significant work for bassoons both small and full-size using this term is an oratorio by Johann Mattheson, *Das Große in dem Kleinen,* composed in 1722 when Mattheson was cantor at St Mary's Cathedral in Hamburg.[17] This substantial work sees the terms "Fagottini" and "Fagotti" used side by side, along with "Bassono". The first time fagottini are mentioned by name in this oratorio is on page 49 of the manuscript, in a Jesus aria "con Violette e Fagottini all'unisono, traversi all'ottava di sopra", which makes use of violas, fagottini and traversos as obligato instruments along with the solo vocal line and basso continuo (Fig. 6). The traversi drop in and out of the upper line, playing the same alto clef line as the violas and fagottini, but one octave higher than written.

The term fagottini also appears on page 55 of the manuscript (Fig. 7), in the Aria of Ardito, where there is a distinct tutti unisono texture: violins in

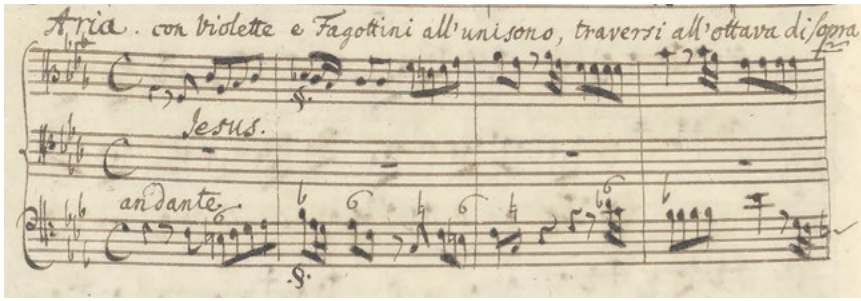


Fig. 6: Johann Mattheson, Oratorio *Das Große in dem Kleinen* (1722), Aria Jesus con Violette e Fagottini all'unisono, traversi all'ottava di Sopra, "Wenn Satan und Hölle, wenn Sünde und Menschen", Staats- und Universitätsbibliothek Hamburg, ND VI 142, page 36 (49). Public Domain.

17 Mattheson, *Das Große in dem Kleinen* (see n. 3).

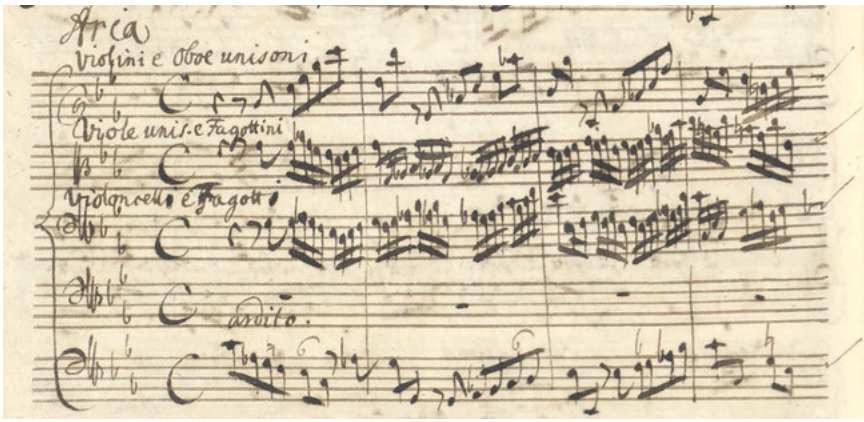


Fig. 7: Johann Mattheson, Oratorio *Das Große in dem Kleinen* (1722), Aria Ardito, "Aus Liebe" Viole unis. e Fagottini, Staats- und Universitätsbibliothek Hamburg, ND VI 142, page 42 (55). Public Domain.

unison with oboes, violas in unison with fagottini, and violoncello in unison with fagotti. It is interesting that all string parts are doubled by wind instruments here – violas are not often doubled by wind instruments in their written octave in tutti passages. Although the term "fagottino" appears very late in the oratorio, it is unlikely that the fagottini played only in these two arias.

The first page of the Sinfonia and the title pages of the oratorio do not mention instrumentation at all. In the opening Grave there are simply two instrumental parts in treble clef, a part in alto clef, and a basso continuo part (Fig. 8). The oboes and violins are marked solo or soli in the score only when it is intended that they play something different from one another. This appears for the first time in the second system of the Sinfonia and suggests that, if no specific instrument is indicated in the score, the passage is meant to be played in tutti.

In certain passages Mattheson specifies where only violas play, suggesting that other instruments also played the line in alto clef elsewhere. One such example is in the "Chor der Jünger", where the term "Viole" appears next to the alto-clef line. He also clearly indicates where only certain instruments of the bass group are to play, such as "Bassono", or "bassono solo" together with "oboe soli". He regularly uses terms such as "Tutti li Strom", "Tutti li Bassi" or just "Tutti." These instrumentation considerations may eventually become clearer

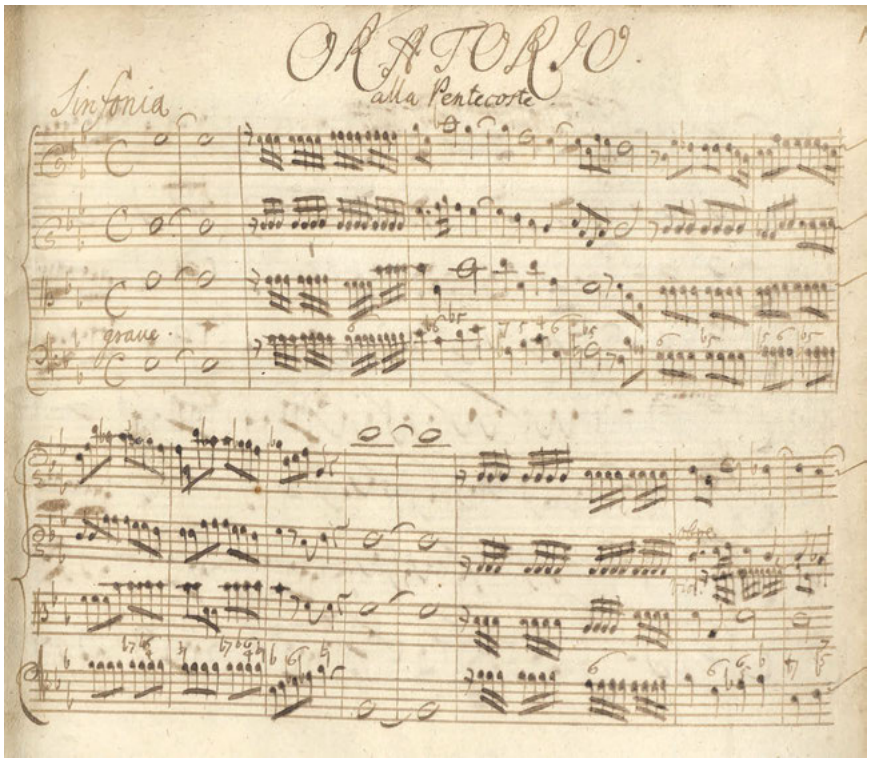


Fig. 8: Johann Mattheson, Oratorio *Das Große in dem Kleinen* (1722), Sinfonia, Staats- und Universitätsbibliothek Hamburg, ND VI 142, page 1 (14). Public Domain.

and suggest different possibilities in performance when considering instrumentation in large-scale Baroque works, especially those requiring multiple bassoons, such as Handel's oratorio *Alexander's Feast*, which requires three bassoons, or Keiser's opera *Die Edelmühtige Octavia,* requiring five bassoons.

During the time in which Mattheson was cantor in Hamburg, Keiser worked in Copenhagen, as Master of the Danish Royal Chapel from 1721 to 1727. Prior to taking up that position, Keiser mentions in 1720 that "The King of Denmark has eight such bassoons and bassonets in his Grenadier Guards, which are extremely pompous and pleasing to hear."[18] In the same year, in a

18 James B. Kopp, *The Bassoon,* New Haven and London: Yale University Press 2012, 224.

letter to the court of Württemberg, he offered two suites for bassoon octet which he had recently composed. Unfortunately, these suites cannot be located at present.

In 1728, Keiser succeeded Mattheson as cantor of St Mary's Cathedral and composed several works which employed multiple bassoons in obligato roles. This suggests that, when Keiser employed five bassoons, such as in the aria "Geloso sospetto tormenta" from his opera *Die Edelmühtige Octavia* for the Hamburg Opera, he probably required bassoons of different sizes. Steffen Voss mentions a similarity between the instrumentation of Mattheson's *Das Große in dem Kleinen* (1722) and that of Keiser's *Desiderius, König der Langobarden* (1709), which employs six double reed instruments to reinforce the string parts.[19]

The fourth cantata, *Die verliebte Diana,* from Keiser's collection of cantatas *Gemüths-Ergötzung* (Hamburg, 1698), includes an aria for Philomele, "Deinen Willen zu erfüllen".[20] This aria is scored for violette unison or fagotto solo and oboe (Fig. 9), and in the manuscript the entire fagotto part is notated in alto clef, extending from g to d", which would be impossible to play on a full-sized bassoon in this written range. In other sections of the cantata, Keiser indicates where an instrument is required to play in an octave other than that notated. An example can be found in the preceding aria with recorders, where the violins are instructed to play an octave higher. But no change of octave is mentioned for the bassoons in this aria, which suggests the use of a small bassoon.

Another cantata by Telemann is listed in Table 2, *Abscheuliche Tiefe des grossen Verderbens,* which uses the term "Fagotto" but is entirely written in alto clef (Fig. 10), and, if played at the notated octave, exceeds the range of the full-sized bassoon.[21]

19 Steffen Voss, "Die Verwendung der Holzblasinstrumente in Werken Hamburger Opernkomponisten der Barockzeit", in: *Flöte, Oboe, Klarinette und Fagott. Holzinstrumente bis zum Ende des 18. Jahrhunderts: Symposium im Rahmen der 33. Tage Alter Musik in Herne 2008,* München: Katzbichler 2011, 94–95.

20 Reinhard Keiser, *Die verliebte Diana*, Manuscript copy of the printed version in Deutsche Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Musikabteilung, Mus.ms. 30227 (2) (RISM ID no.: 455032957).

21 Georg Philipp Telemann, Cantata *Abscheuliche Tiefe des großen Verderbens* (TWV 1:1), Cantata on Sunday after Christmas, from: *Fortsetzung des Harmonischen Gottesdiens-*

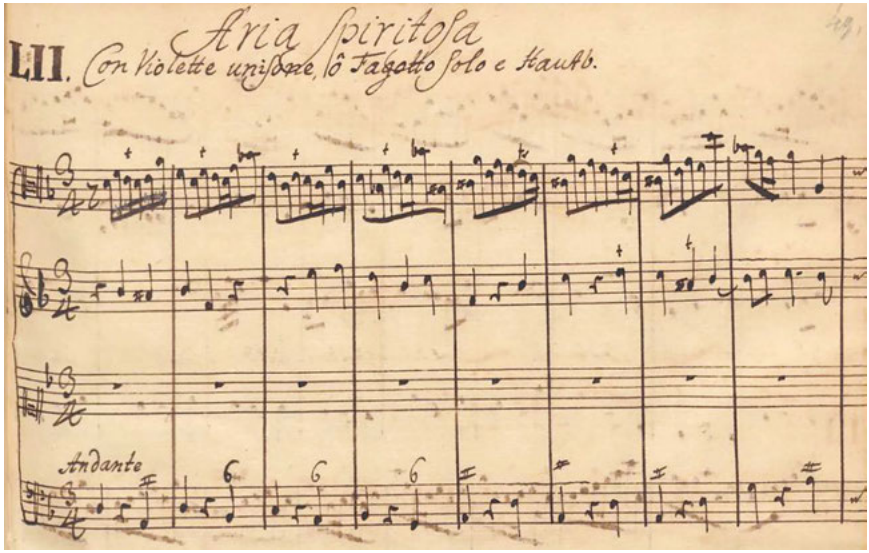


Fig. 9: Reinhard Keiser, Cantata *Die verliebte Diana (1698)*, Aria spiritosa of Philomile, "Deinen Willen zu erfüllen", Staatsbibliothek zu Berlin - Preußischer Kulturbesitz, Mus.ms. 30227 (2). Public Domain.

It seems that in the early 18th century, octaves were interchangeable; violas, or sometimes even violins, were asked to double the bass line, which of course they would do at their own octave. Many composers of the time, including Telemann, were experimenting with the sound colour of doubling octaves; bassoons double violin lines in Telemann's *Tageszeiten* (Hamburg, 1757), for example. Following this reasoning, one could question whether full-sized bassoons could play an octave lower than written, in fagotto parts notated in alto clef, such as in Telemann's *Abscheuliche Tiefe* (TWV 1:1), or in his *Nouvelle*

tes oder geistliche Kantaten […], Hamburg: author [1731], strumento primo part, p. 56, D-Hs M C/349: St; digitized: https://digitalisate.sub.uni-hamburg.de/recherche/detail?tx_dlf%5Bid%5D=46992&tx_dlf%5Bpage%5D=62&tx_dlf_navigation%5Baction%5D=main&tx_dlf_navigation%5Bcontroller%5D=Navigation&cHash=e297c19442b4eeefa85cd0fbce2fe3b8 (25 November 2023). A performance of this work with the author playing fagottino may be viewed at: https://youtu.be/wGbcrgxU-0s?si=nm4NJr5rlbnk6f4O (25 May 2023). An edition is in preparation.

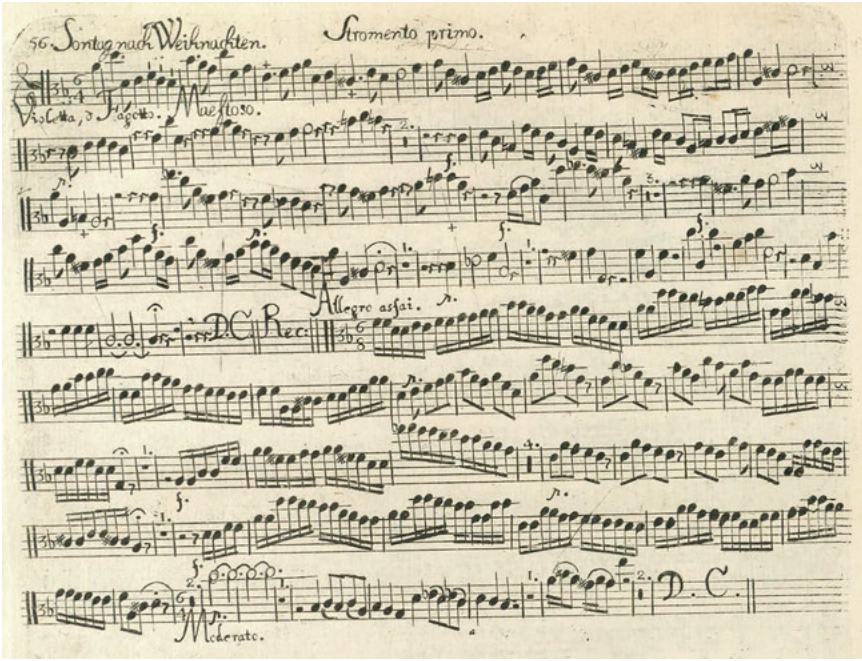


Fig. 10: Georg Philipp Telemann, *Abscheuliche Tiefe des großen Verderbens* (TWV 1:1), Cantata for Sunday after Christmas, from: *Fortsetzung des Harmonischen Gottesdienstes oder geistliche Kantaten* […], Hamburg: author [1731], Staats- und Universitätsbibliothek Hamburg, M C/349, strumento primo part, page 56. Public Domain.

Sonatines (1730/31), notated in French violin clef. This would depend on the written bass line, and whether the melodic line would cross it if played an octave lower.

In the case of the *Nouvelle Sonatines,* the only existing basso continuo part for the version with violin has no voice crossing. If this basso continuo part is used to accompany a full-sized bassoon playing the melody in its own register, the lines unfortunately cross, something which is avoided when performing the work with a fagottino. This is also the case with *Abscheuliche Tiefe*; if played on the fagottino at the written pitch, bass line crossing doesn't occur. This cantata makes use of violetta or fagotto as "Stromento primo", and traverso as "Stromento secondo". Both wind instruments are in obligato roles throughout, along with the solo alto vocal line and the basso continuo.

This short cantata has only three movements, two da capo arias separated by a short recitative. The second aria is a fiery Allegro assai "Wenn in der Luft die Wetter sausen, wenn Donner rollen, Fluten brausen, bleibt meine Ruh ganz unbewegt" in which the fagottino alternates between waves of accompanying sixteenths and sections doubling the vocal line. The B section brings a beautiful moment of stillness, with floating sustained notes from both winds depicting the text "Da Jesus mir zum Fels beschieden, so lieg und schlaf ich, ganz mit Frieden", thus demonstrating the fagottino as an instrument that can also be delicate and soloistic.

Conclusion

Hamburg as a cultural hub in the 18th century is undoubtedly significant in the history of small bassoons, both for the amount of important repertoire that appears to have been composed specifically for these instruments, as well as for the connections between composers who lived and worked in the city. The cantatas of Zachow, Kieling and Telemann that use bassonetto in their scoring have similar instrumentation and illustrate an established sound genre. Mattheson's oratorio *Das Große in dem Kleinen* is an example of a large-scale work making use of small bassoons, referred to as fagottini.

The works discussed here provide many clues about specific instrumental textures used by this group of composers and about how small bassoons were employed, and inspire further consideration of the instrumentation of 18th century works requiring multiple bassoons. More can be learned as copies of small bassoons are used in future performances; modern-day audiences may experience a transformed tonal landscape which includes "bassonetti" and "fagottini".

The Tenor Bassoon in the Context of Harmoniemusik, Turkish Music and Military Music

David Gasche

"There are various types of bassoon […] secondly, the tenor bassoon, whose notes sound a fifth higher."[1] Several authors, from Johann Heinrich Zedler (1731–1754) to Hector Berlioz (1844) and Andreas Nemetz (1860), mention the fagottino or tenor bassoon, and recent studies by Klaus Hubmann (2011)[2], James Kopp (2012)[3], Donna Agrell and Aurea Domínguez (2018)[4], among others, provide various theories about its function, but its exact musical use is still poorly documented. Further reflections and comments here will elaborate on these investigations and complement them with thoughts on the use of the tenor bassoon. Initially, ongoing research will be presented, with a particular focus on repertoire and scoring. A comparative analysis of contemporary sources will then shed light on the use of the tenor bassoon in this musical field. Finally, an attempt is made to explain some characteristics of the tenoroon GdM I. N. 16 (Vienna), FT125, in order to contribute to a better understanding of the 'small' bassoons of the 18th and 19th centuries.

1 Andreas Nemetz, *Allgemeine Musikschule für Militär Musik*, Vienna: Ant. Diabelli & Comp. 1860, 53. "Es gibt mehrere Arten der Fagotte […] 2^{tens} der *Tenor-Fagott*, dessen Töne um eine *Quinte* höher klingen."

2 Klaus Hubmann, "Hoch gestimmte Fagotte (Tenorfagotte) in der Musik vom späten 16. bis zum späten 18. Jahrhundert", in: *Flöte, Oboe, Klarinette und Fagott. Holzinstrumente bis zum Ende des 18. Jahrhunderts*, Symposium im Rahmen der 33. Tage Alter Musik in Herne 2008, München and Salzburg: Katzbichler 2011.

3 James B. Kopp, *The Bassoon,* New Haven and London: Yale University Press 2012, 222–228.

4 Donna Agrell and Áurea Domínguez, "Small-sized bassoons from the eighteenth and nineteenth centuries under investigation", in: *Glareana* 67/2 (2018), 58–74.

The term "Harmoniemusik" remains ambiguous and often causes confusion between instrumentations, genres and functions. A variety of terms exist, including Harmonie, Harmonie-Musik, vollstimmige Harmonie, vollständige Harmonie, Harmonie-Orchester, Harmonie-Chor, große Harmonie, Banda, Feldmusik, Hautboisten-Bande, Hoboisten-Chor, Oboistenkorps, türkische Musik and Janitscharenmusik. To some extent, they were and still are interchangeable. In 1796 Johann Ferdinand Schönfeld defined military music in the *Jahrbuch der Tonkunst von Wien und Prag* in the following way:

> Military music is either ordinary "Feldmusik" or Turkish music. The Feldmusik, or so-called Harmonie, which is also called banda, consists of two French horns, two bassoons and two oboes; these instruments are also found in Turkish music ensembles, which also includes two clarinets, a trumpet, a triangle, an octave flute and a very large drum, an ordinary drum and a pair of cymbals. When the castle guard and the main guard are raised, the field music is heard. In the summer months Turkish music is played in fine weather in the evenings in front of the barracks, and sometimes also in front of the main guard.[5]

The terminology depends largely on the instruments used and the context of the performance. It is possible, however, to identify certain distinctions between military music (Feldmusik, Hoboisten-Chor, türkische Musik and Janitscharenmusik) and light music (Harmoniemusik and full-voiced Harmonie). A fundamental question in researching this music is in which place and for what occasion a given work was performed. This helps in many cases to determine the title of the work or the instrumentation. It should also be considered that an ensemble could perform several times a day and for different occasions, sometimes also reinforced by other wind and percussion instruments. This is

5 Johann Ferdinand Schönfeld, *Jahrbuch der Tonkunst von Wien und Prag*, facsimile reprint of the Vienna 1796 edition, edited by Otto Biba, Munich: Katzbichler 1976, 98–99. "Die Militärmusik ist entweder die gewöhnliche Feldmusik, oder die türkische Musik. Die Feldmusik, oder sogenannte Harmonie, welche man auch Bande nennt, besteht aus zwei Waldhörnern, zwei Fagoten, und zwei Oboen: Diese Instrumente kommen auch bei der türkischen Musik vor, wozu aber noch zwei Klarinette, eine Trompete, ein Triangel, eine Oktavflöte und eine sehr große Trommel, eine gewöhnliche Trommel und ein paar Cinellen gehören. Beim Aufziehen der Burgwache und der Hauptwache hört man die Feldmusik. Die türkische Musik wird in den Sommermonaten Abends bei schönem Wetter vor den Kasernen, bisweilen auch vor der Hauptwache gegeben."

the case with Turkish music, which was primarily intended as entertainment music, especially for summer outdoor concerts played in front of barracks or in public squares in the city. The officer corps, for example, could finance this ensemble for its own purposes. The repertoire included marches, overtures and opera arrangements. The octet was expanded to include brass instruments such as trumpets and the 'Turkish' instruments already mentioned by Schönfeld, such as drums, cymbals, and bells. The Harmoniemusik thus created a close and unique connection between the repertoire, the instrumentation, the function and the occasion.

Pure wind ensembles, mainly used in military and church music, were already found in the German-speaking countries in the late 17th and early 18th centuries. Their emergence can be definitively traced back to several influences. One of these was the presence at the court of Louis XIV and the establishment of the *Grande Ecurie*, which was an important musical component of court life. Comprising this were various ensembles, including the *Trompettes*, *Violons, hautbois*, *saqueboutes et cornets*, *Hautbois et musettes du Poitou, Fifres et tambours* and the *Cromornes et Trompettes marines*.[6] The most prestigious group was the twelve *Grands Hautbois*, which consisted of oboes and bassoons, occasionally joined by other wind instruments such as cornetts, trombones and crumhorns. They played ceremonial pieces, military and outdoor music for royal processions, *carrousels*, ballets, military victory celebrations, etc. This model spread throughout Central Europe and soon afterwards "oboe bands" were also established at German courts. In 1690, Wolfgang Caspar Prinz in Dresden noted that: "In our time, the noble hero Herr Graff von Sparr, General Major, introduced the use of shawms and bassoons in war. A few years ago, the French shawms, called *hautbois,* appeared and were used in war."[7]

6 In this context, reference should be made to the research project "*La Grande Écurie du Roi*, project for the research and reconstruction of the instruments and their repertoire at the court of Louis XIV and XV" of the Schola Cantorum Basiliensis from 2007 to 2009, https://forschung.schola-cantorum-basiliensis.ch/de/forschung/grande-ecurie.html (20 May 2023).

7 Wolfgang Caspar Prinz, *Historische Beschreibung der edelen Sing- und Kling-Kunst*, Dresden 1690, XIV. § 37, 179. "Zu unserer Zeit noch, hat der fürtreffliche Held, Herr Graff von Sparr, General Major, den Gebrauch der Schallmeyen, und Fagotten in dem Kriege eingeführet. Vor wenigen Jahren seyn die Französis. Schallmeyen, *Hautbois* genannt, auffkommen, und im Kriege bräuchlich worden."

The instrumentation was expanded alongside further developments in playing technique and instrument construction. The late 17th and early 18th centuries were marked by the gradual disappearance of some instruments (e. g. crumhorn, shawm and cornett), whose sound was considered too loud or shrill. Innovations in instrument making made it possible to improve existing instruments or to create new ones. There was also the question of the Harmonie as an instrumental ensemble. The point at which the bassoon reinforced the instrumentation cannot be precisely determined. In 1713 Johann Mattheson describes its role as a bass voice and as an accompanying instrument: "The proud bassoon […] is the ordinary bass, the foundation or accompaniment of the oboes."[8] Between about 1680 and 1720, ensembles consisted mainly of oboes and bassoons, the number of which could vary according to the court and the occasion. At the beginning of the 18th century the 'early' Harmonie expanded further to include the horn. *Die Europäische Fama* mentions that, on the occasion of a campaign in Dresden on 24 February 1716, "50 Grenadiers marched beforehand, followed by a choir of oboists, some of whom had horns."[9] Hannß Friedrich von Flemming writes in 1726: "In the case of the Royal Polish and Electoral Saxon Infantry it is expected that two horn players also join the oboists, which results in a quite pleasant Harmonie."[10] Julius Bernhard Rohr, in his *Einleitung zur Ceremoniel-Wissenschafft der großen Herren* (Introduction to the Ceremonial Knowledge of the Great Lords, 1729), describes the combination of oboe, bassoon and horns for various occasions: "In a military action, as in a battle, siege and conquest of a castle, one hears trumpets and timpani; on the other hand, in peace conventions, as well as in

8 Johann Mattheson, *Das Neu-Eröffnete Orchestre*, Hamburg: Author 1713, 269. "Der stoltze Basson, Basse de Chormorne (sic!), *Ital.* Fagotto, Vulgò Dulcian, ist der ordinaire Bass, das Fundament oder Accompagnement der Hautbois."

9 *Die Europäische Fama, welche den gegenwärtigen Zustand der vornehmsten Höfe entdecket,* 183. Theil, 1716, 227. "Vorher marchireten 50. Mann Grenadiers, denen folgeten ein Chor Hautboisten, so theils Waldhörner hatten."

10 Friedrich von Fleming, *Der vollkommene teutsche Soldat*, Leipzig: Johann Christian Martini 1726, 182. "Bey der Königlichen Polnischen und Churfürstlich Sächsischen Infanterie ist angeordnet, daß über denen Hautboisten annoch zwey Waldhornisten mit einstim[m]en müssen, welches eine recht angenehme Harmonie verursacht."

love alliances, etc., one hears oboes, horns etc."[11] The term "Harmonie" appeared in the 1720s, to describe a homogeneous and purely instrumental ensemble. The musicians usually came from a military regiment and their task was to perform field, war, or regimental music. Ensembles like these also appear in examples in the visual arts, such as the copper engraving *Die Feldmusik (Hautboisten) eines Regimentes,* circa 1720.[12]

Composers including Johann Heinrich Schmelzer, Johann Christoph Pezel, Georg Daniel Speer, Georg Philipp Telemann, Georg Christoph Wagenseil and Florian Leopold Gassmann dedicated several pieces to this new instrumentation. Johann Georg Christian Störl's March for two oboes, two horns and bassoon (1711), dedicated to Duke Eberhard Ludwig von Württemberg, is often cited as one of the first of these works, alongside Georg Philipp Telemann's *Overture-Suite* TWV 55:24, for two oboes, two horns and bassoon.[13] Other factors, including a connection to genres such as the sonata or concerto, along with the general emancipation of instrumental music, must be taken into account.

These first Harmonies appeared quite quickly in Bohemia and Moravia in the 1760s. Several factors could explain this success, including a preference for the horn, and the presence of numerous wind virtuosos. Aristocrats such as the Princes Schwarzenberg and Esterházy, Counts Morzin and Pachta, and the courts of Olomouc and Kroměříž maintained a wind quintet, sextet or octet, whose function was to present outdoor and banquet music, using arrangements of operas, ballets and symphonies and original works such as parthias,

11 Julius Bernhard von Rohr, *Einleitung zur Ceremoniel-Wissenschafft der großen Herren,* Berlin 1729, Der Vierdte Theil. Von dem Ceremoniel bey unterschiedenen Arten der Hochfürstlichen Divertissements, XI. Capitul, § 12, 852. "Bey einer martialischen Action, als bey einer Schlacht, Belagerung und Eroberung eines Castels höret man Trompeten und Paucken; hingegen bey Friedens=Inventionen, als bey Liebes=Bündnissen u. s. w. Hautbois, Waldhörner u. s. w."

12 Nürnberg: Christoph Weigels Witwe, n. d., (Heeresgeschichtliches Museum, Vienna), in: Erich Egg und Wolfgang Pfaundler (eds.), *Das grosse Tiroler Blasmusikbuch*, Vienna: Fritz Molden 1979, 49.

13 Cf. Achim Hofer, "Geburtsmomente der Harmoniemusik", in: Boje Schmuhl (ed.), *Zur Geschichte und Aufführungspraxis der Harmoniemusik*, XXXII. Wissenschaftliche Arbeitstagung Michaelstein, Konferenzberichte, Augsburg: Wißner 2006, 37–52.

nocturni and divertimenti. Their activities were no longer limited to military music, but also extended to entertainment or other social occasions. During these years the clarinet, which was already used in regimental music, was also gradually incorporated into the ensembles. Harmoniemusik nevertheless occupied a limited place in the imperial city. An oboe band at the courts of Ferdinand III (1637–1657) and Leopold I (1658–1705) accompanied military marches and parades, but the horn was only occasionally used in this ensemble. In 1741 it consisted of three oboes and four bassoons and, depending on the occasion, also added six trumpets, one horn and six trombones.[14] This military line-up is depicted in the painting *Parade of the Viennese Citizen Military on the Graben on 27 October 1745 on the occasion of the return of Emperor Franz I and Maria Theresa from the imperial coronation in Frankfurt*.[15] The Bohemian and Moravian courts contributed significantly to the spread of the Harmonie in Vienna by bringing their musical customs, repertoire and musicians to the capital.

The years 1780 to 1810 were the heyday of Harmoniemusik, reflected in the large number of Harmonies and Turkish music ensembles as well as in the scope of the repertoire. The ensembles mainly served the nobility where they enjoyed great popularity, but within a few years they also appeared in the rest of society. The main fields of activity were church music, masonic music, military music, open-air music, banquet music, academy concerts as well as private parties, and wind ensembles were heard in various places, such as inns, gardens, palaces, salons, ballrooms, concert halls, etc. Numerous reports, among others by Charles Burney during his stay in Vienna on 9 September 1772,[16] by Wolfgang A. Mozart in a letter dated 8 May 1782[17] and by Johann

14 See David Whitwell (ed.), *The Baroque Wind Band and Wind Ensemble. History and Literature of the Wind Band and Wind Ensemble,* vol. 3, Northridge: Winds 1983, 45–56.

15 Anonymous, *Parade des Wiener Bürgermilitärs auf dem Graben am 27. Oktober 1745 anlässlich der Rückkehr Kaiser Franz' I. und Maria Theresias von der Kaiserkrönung in Frankfurt,* oil on canvas, Historisches Museum der K. K. Haupt- und Residenzstadt Wien, Inv. no. 31477, https://sammlung.wienmuseum.at/en/object/60565/ (23 October 2024).

16 Charles Burney, *Tagebuch einer musikalischen Reise,* ed. by Christoph Hust, Kassel: Bärenreiter 2003, 306.

17 Wolfgang Amadeus Mozart, *Briefe und Aufzeichnungen* 1780–1786, 3rd volume, ed. by the International Mozarteum Foundation Salzburg, Kassel: Bärenreiter 2005, 207–208.

Ferdinand Schönfeld in his *Jahrbuch der Tonkunst von Wien und Prag* (1796),[18] describe the place and role of Harmoniemusik. The establishment of the "kaiserliche-königliche Harmonie" by Joseph II in Vienna in April 1782 further promoted these ensembles and their music and became a model for other court bands. The octet was a very popular instrumentation and suited both open-air entertainments and private concerts. It offered new sound possibilities and had the advantage of reducing the size of the ensemble without losing its distinctive sound.

There were also economic reasons. The wars against Napoleon from 1792 onwards forced many noble families to dismiss their chapels or reduce them to a smaller ensemble, which was often a Harmonie. Johann Ferdinand Schönfeld wrote in 1796 that "there is almost no [chapel] left except that of Prince Schwarzenberg. In the latter, however, one finds great virtuosos, especially among the Harmonie. Prince Grassalkowitz has reduced his chapel to a Harmonie, with the great clarinettist Grießbacher as director. Baron von Braun has his own Harmonie for banquet music. There is still one Harmonie, which the court caterer Mr. Jahn usually supports"[19] Some ensembles were still active, however, such as the Oboe-Band (also called Harmonie), which consisted of twelve young musicians and had been founded in Sondershausen in 1801 under the direction of Johann Simon Hermstedt,[20] or the Liechtenstein Harmonie established on 1 April 1812 under the direction of Wenzel Sedlák.[21] Harmoniemusik experienced a gradual decline in the 1820s. The dissolution of several Harmonies and Turkish music ensembles in the years 1835–1837, including the kaiserlich-königliche Harmonie in Vienna and the Oboe-Band

18 Schönfeld, *Jahrbuch der Tonkunst* (see n. 5), 98–99.

19 Schönfeld, *Jahrbuch der Tonkunst* (see n. 5), 77–78. "[…] daß außer der fürstl. Schwarzenbergischen fast keine [Kapelle] mehr existiert. Bei dieser aber findet man, vornehmlich unter der Harmonie ganz ausgezeichnet große Virtuosen. Fürst Graßalkowitz hat seine Kapelle in eine Harmonie reduziert, wobei der große Klarinetist Grießbacher Direktor ist. Hr. Baron von Braun hält eine eigene Harmonie zur Tafelmusik. Noch ist eine Harmonie, welche der Hoftracteur Hr. Jahn meistens aushält."

20 Cf. (Ernst Ludwig) Gerber, *Sondershausen,* in: *Allgemeine Musikalische Zeitung*, April 1809, 11th volume, Leipzig: Breitkopf und Härtel, 422–430.

21 Cf. Roger Hellyer, *Harmoniemusik: Music for Small Wind Band in the Late 18th and Early 19th Centuries,* Ph.D., University of Oxford 1973, 168–185.

in Sondershausen, are examples that illustrate a shift from Harmoniemusik to military music in the German lands after 1830, especially regarding instrumentation, repertoire and activities.[22]

The repertoire

The repertoire is extensive but can be divided into three distinct categories: military music, church music and incidental music. Military music consists of marches, overtures, small pieces and arrangements. It is undoubtedly the oldest genre and remained the best known in the 19th century. In religious music, the role of wind instruments was usually to accompany the vocal parts. Evidence of this practice, which was widespread in Bohemia, Moravia, and the entire Austrian Empire, are thousands of masses, funeral songs and marches for Corpus Christi processions or funeral services preserved in the archives of churches and monasteries. This repertoire, often anonymous and modest, continued to be cultivated into the 19th century. Incidental music initially comprised original pieces, especially the parthia, nocturne, cassatio, divertimento and serenade. The number and arrangement of movements was not fixed, although there was a tendency towards five movements, and later, four movements, following the example of the sonata. The title was mostly related to the scoring, function and occasion. After 1800, there were more arrangements than original works, and this tendency intensified as the century progressed. Heinrich Christoph Koch describes this situation as early as 1802: "Arrangements for these instruments are being made of operas and other pieces that are actually intended for a different use, because there is still a lack of a sufficient number of good pieces that were originally set for this kind of music."[23] In the 19th century composers were criticized for not writing enough original works, but rather concentrating on

22 An ongoing research initiative of the International Centre for Wind Music Research at the University of Music and Performing Arts Graz has been able to prove the existence of more than 120 Harmonies and Turkish music ensembles, and more than 500 composers and arrangers in German-speaking countries from about 1760 to 1840, https://institut-oberschuetzen.kug.ac.at/forschung/pannonische-forschungsstelleinternationales-zentrum-fuer-blasmusikforschung/projekte (22 May 2023).

23 Heinrich Christoph Koch, *Musikalisches Lexikon,* Frankfurt: August Hermann d. J. 1802, col. 738. "[…] man arrangiert für diese Instrumente Opern und andere Stücke, die ei-

arrangements, which led to a lack of original literature for wind orchestra. Arrangements of operas, ballets, symphonies as well as chamber music and piano sonatas represented the largest part of the repertoire of the Harmonie. Thousands of scores can still be found in archives and libraries today. From 1820 onwards the Harmonies still had remarkable success with arrangements of operas, marches, waltzes and polkas. This practice continued to develop and became an essential foundation of wind band music.

The use of the tenor bassoon as a special instrument

At present, only one composition is known in which the tenor bassoon is explicitly used in Harmoniemusik. It is the four-movement *Parthia* in C major by Johann Georg Michael Frost, for two horns in C, two octave bassoons, two quart bassoons and two bassoons.[24] Little is known about the composer. He is referred to as "Hof-Pfeifer" from 1784 until at least 1807 in the Sächsischer Hof- und Staatkalender.[25] In other references of the time the tenor bassoon is also mentioned. The *Allgemeine musikalische Zeitung* reports on a programme item during the benefit concert at the k. k. Hoftheater in Vienna on 19 April 1815: "Variations for the tenor bassoon, comp[osed]. and played by Hrn. Czeyka. This instrument is to the ordinary bassoon as the cor anglais is to the oboe, and the basset horn to the clarinet, only in the reverse proportion, so that here notes are gained in the high register which the latter possesses in the low register. The tone is sonorous and pleasant; the accomplished player would have even delighted more if he had given only half."[26] The score is lost, and only this commentary provides a clue to the sound of the tenor bassoon, and

gentlich zu einem andern Gebrauche bestimmt sind, weil es bis jetzt noch an einer hinlänglichen Anzahl guter Tonstücke fehlet, die ursprünglich für diese Art der Musik gesetzt waren."

24 No: IV | PARTHIA | | 2. Corni in C. | 2. fagotti. = octavo | 2. fagotti. = quarto | et | 2. fagotti. | [incipit fag octavo 1] | del | J. G. M. Frost; Zwickau, Ratsschulbibliothek (D-Z), Mu 576 (RISM ID no. 220031424).

25 Hubmann, "Hoch gestimmte Fagotte" (see n. 2), 76.

26 *Allgemeine musikalische Zeitung*, No. 16, 19 April 1815, Leipzig: Breitkopf und Härtel 1815, 274. "Variationen für den Tenor-Fagott, comp. und gespielt von Hrn. Czeyka. Dieses Instrument verhält sich zum gewöhnlichen Fagott, wie das englische Horn zur Hoboe, und das Bassetthorn zur Klarinette, nur im umgekehrten Verhältnis, so dass hier die Töne in der

perhaps also to the quality of the work or performance. It was performed a second time on 22 January 1821 in the Imperial and Royal Grand Redoutensaal, in honour of the famous soprano Angelica Catalani.[27]

The instrumentation of Harmoniemusik was variable and often depended on the individual taste of a nobleman, the musical habits of a court, and the restrictions imposed on the composer. Count Carl von Palm maintained a wind quintet (two clarinets, two horns and a bassoon), whereas Prince Schwarzenberg had a wind octet with two cor anglais instead of clarinets. In some cases, a composer or virtuoso showed a preference for a particular wind instrument, such as Johann Nepomuk Wendt and Joseph Triebensee, both members of the imperial Harmonie as oboists, or Karl Gottlieb A. Göpfert and Wenzel Sedlák for the clarinet. Before 1760, as already mentioned, most wind ensembles featured two oboes, two horns and one or two bassoons (Fig. 1).

The 'classical' Harmonie from the 1770s onwards, also called full-voiced Harmonie, usually consisted of two oboes, two clarinets, two horns and two bassoons to form a wind sextet or octet. Heinrich Christoph Koch defines it in the *Musikalisches Lexikon* (1802): "Harmoniemusik is the name given to music consisting completely of wind instruments, usually two oboes, two clarinets, two horns and two bassoons."[28] Depictions of these ensembles can be found in the reverse glass painting *Musikkapelle des Grünen Bürger Korps* by Ignaz Pfeilhauser (Linz, 1796) or in the watercolour *Die Promenade auf der Burgbastei* by Lorenz Janscha (Vienna, 1797).[29] Turkish music ensembles added brass and percussion instruments to create a group of twelve or fourteen or more musicians. Other instruments such as flute, cor anglais, brass

Höhe gewonnen sind, welche jene in der Tiefe besitzen. Der Ton ist sonor und angenehm; der fertige Spieler würde noch mehr ergötzt haben, wenn er nur die Hälfte gegeben hätte."

27 *Allgemeine musikalische Zeitung,* No. 9, 28 February 1821, Leipzig: Breitkopf und Härtel 1821, 147.

28 Koch, *Musikalisches Lexikon* (see n. 23), 737–738. "Harmoniemusik, nennet man diejenige, die lauter Blasinstrumenten, und zwar gewöhnlich aus zwey Hoboen, zwey Clarinetten, zwey Hörnern und zwey Fagotten bestehet."

29 *Musikkapelle des Grünen Bürger Korps*, reverse glass painting by Ignaz Pfeilhauser 1796 (Linz, Schlossmuseum, inventory no. F-2483); watercolour *Die Promenade auf der Burgbastei* by Lorenz Janscha 1797 (Vienna, Albertina).

Fig. 1: Harmonie, Supraporte on a Biedermeier House from 1815 in Pettau (Ptuj, Slovenia). Photo: Klaus Hubmann.

(trumpet, trombone and serpent), basset horn, contrabassoon, double bass or percussion instruments were used according to the situation and occasion.

Apart from a few specific works or Harmonies, the most famous of which was that of the Oettingen-Wallerstein court, the flute was not included.[30] This points to the question of the makeup of the ensemble, which is crucial in determining the possible use of the tenor bassoon in Harmoniemusik. The instruments play in pairs and there is a balance between the upper voices (oboes, clarinets), the middle voices (clarinets, horns) and the bass (bassoon) in order to achieve a harmonic and tonal ideal. The tenor part, which can be taken by several instruments, is not a major problem. The weakness in the instrumentation lies more in the bass register, and to compensate for this the trumpet, the serpent, the double bass and later the contrabassoon were used in some works. This motivated the later invention and construction of low wind instru-

30 The Harmoniemusik at the Court of Oettingen-Wallerstein. Silhouette on gold background by Joseph Widmann, ca. 1785 (private property of the House of Oettingen-Wallerstein).

ments such as the ophicleide (ca. 1817) and tuba (ca. 1835 to 1845–46). Nevertheless, one cannot completely exclude the tenor bassoon being used in the bass function, especially in the earliest ensembles, as suggested by one of the first descriptions of the fagottino, by Johann Heinrich Zedler in the middle of the 18th century: "Fagottino, fagotto piccolo, petit fagot, a small bassoon or wind bass instrument."[31]

Unusual instrumentation also occurs, such as in the *Parthia auf Bauerninstrumenten* around 1790 by Georg Druschetzky (1745–1819). Most likely written in Pest for the court of Batthyány, it combines a wind octet with a *klachter* (xylophone or straw fiddle), a *tromba marina* (Trumscheit), a hurdygurdy, a fiddle, a bagpipe, a zither and two *trombe a tiroli* (alphorns).[32] Certainly this *Parthia* remains a unique case, but it proves that varied instrumentation was possible. Klaus Hubmann has rightly noted: "Another way to find out about possible literature for small bassoon would be to examine the ranges of some solo and ensemble pieces from the period in question. And indeed, in some cases one comes across literature that can only be played on the high quart or quint bassoon, for example, and literature that is suitable for both the small and the 'normal' bassoon."[33] The same principle can be applied to the repertoire for Harmonie. Moreover, the tenor bassoon has sometimes been compared to the cor anglais because of its range and tonal characteristics. It remains to be established that the parts written for cor anglais could also be performed by a small bassoon. This leads to an additional problem of transpos-

31 Johann Heinrich Zedler, *Grosses vollständiges Universal-Lexicon,* Volume 9, Halle: Johann Heinrich Jedle 1735, 93. "Fagottino, Fagotto piccolo, Petit Fagot, ein kleiner Fagott oder blasendes Baß-Instrument."

32 *Parthia* | *Clarinetto Primo e Klachter* | *Clarinetto Secundo e Bruma marina* | *Oboe Primo e Leüer* | *Oboe Secundo e Spanis Fidl* | *Fagotto Primo e Tudlsak* | *Fagotto Secundo e Citer* | *Corno Primo in B e Trombi a Tiroli* | *Corno Secundo e Trombi a Tiroli* | *Del Sigre Giorgio Druschetzky*, Budapest, National Széchényi Library, Music Division (H-Bn), Ms. mus. 1569 (RISM ID no.: 1001133327).

33 Klaus Hubmann, "Hoch gestimmte Fagotte" (see n. 2), 79. "Ein weiterer Weg, mögliche Literatur für kleine Fagotte zu eruieren, wären Untersuchungen von Tonumfängen mancher Solo-, aber auch Ensemblestücke aus der infrage kommenden Zeit. Und tatsächlich stößt man hier in einigen Fällen auf Literatur, die z. T. nur auf dem Hochquart- bzw. Quintfagott spielbar ist und solche, die sowohl für das kleine als auch für das große 'Normalfagott' geeignet ist."

ition, pitch and playability between the two instruments. Hector Berlioz notes in his *Grand Traité d'Instrumentation* (1844): "The quint bassoon is to the bassoon proper in the high register what the cor anglais is to the oboe in the low register. The cor anglais must be written a fifth above, the quint bassoon, on the other hand, a fifth below the real pitch; the quint bassoon thus plays in F when the normal bassoons play in C, it is in G when they are in D, and so on. This instrument is absent in most orchestras but is advantageously replaced in its two higher octaves by the cor anglais."[34] A thorough analysis could produce literature suitable for the tenor bassoon in the context of Harmoniemusik.

Another possibility would be to examine archives and other sources to identify the instruments used in a given court or chapel and compare these results with those of the SNSF research project "Out of the Bass Register – Uncovering the Organology, Pedagogy, and Performance Practice of Small-Sized Bassoons from the 18th and 19th Centuries", which lists over 130 small bassoons.[35] The aim would be to establish a link between the provenance or known references of an instrument and its possible use in a Harmonie. This remains hypothetical, however, as the tenor bassoon is only explicitly indicated in a few scores and other sources. In summary, it is unlikely that this instrument was ever regularly played in a Harmonie. Berlioz's commentary seems to confirm this: "It is much to be deplored and of great disadvantage to wind instrument orchestras that bassoons have been almost entirely banished

34 Hector Berlioz and Richard Strauss, *Instrumentationslehre von Hector Berlioz. Ergänzt und revidiert von Richard Strauss*, Teil I, Leipzig: Peters 1905, 213. "Das Quintfagott ist für das eigentliche Fagott dasselbe, was das Englische Horn für die Oboe in der Tiefe ist. Das Englische Horn muß in der Quinte oberhalb, das Quintfagott dagegen in der Quinte unterhalb der wirklichen Tonhöhe geschrieben werden; das Quintfagott spielt also in F, wenn die eigentlichen Fagotte in C spielen, es steht in G, wenn diese in D stehen u. s. w. Dieses Instrument fehlt in den meisten Orchestern, wird jedoch in seinen beiden höheren Oktaven vorteilhaft durch das Englische Horn ersetzt."

35 See: "Instrument Catalogue of Small-Sized Bassoons, ca. 1700–ca. 1915", October 2024, in this volume.

from them; the harsh, sharp tonal character of such orchestras would be considerably softened by a corresponding number of large and small bassoons."[36]

Perhaps one should focus on military music in the first half of the 19th century, which included a wide variety of wind instruments. Some evidence seems to point in this direction. Heinrich Christoph Koch mentions the instrumentation of the oboe choir in the *Musikalisches Lexikon*: "Such wind music of the oboe bands now commonly consists of two oboes, two clarinets, two horns and two bassoons. Often a flute, one or two trumpets, a quart bassoon or a serpent is associated with it."[37] The quart bassoon here refers to the bass instrument in F and not to the small bassoon, which plays a fifth higher. Josef Fahrbach in *Neueste Wiener Fagott Schule* (1840) points out that the tenor bassoon is only used for solos.[38] Berlioz adds, referring to the *basson quinte*: "Its sound is less expressive but more powerful than that of the cor anglais, and would be of excellent effect in military music."[39] Finally, the *Allgemeine Musikschule für Militär Musik* by Andreas Nemetz (1860) contains a brief definition, cited at the beginning of this article.[40] No specific example of a tenor bassoon being used in a military ensemble has yet been verified, but the likelihood of this is much greater than in other wind bands. The instrumentation of regimental music was particularly rich and varied in the 1830s. This can be related to practical aspects such as lower purchase and maintenance costs, as well as an advantage when marching. An often forgotten and as yet little researched aspect is in the field of folk songs and dances, in which unusual wind

36 Berlioz/Strauss, *Instrumentationslehre* (see n. 34), 213. "Es ist sehr zu beklagen und von großem Nachteil für die Blasinstrument – Orchester, daß man die Fagotte fast ganz aus ihnen verbannt hat; der rauhe, scharfe Klangcharakter solcher Orchester würde durch eine entsprechende Anzahl großer und kleiner Fagotte erheblich gemildert werden."

37 Koch, *Musikalisches Lexikon* (see n. 23), col. 759. "Eine solche Blasmusik der Hoboisten=Chöre bestehet anjetzt gemeiniglich aus zwey Hoboen, zwey Clarinetten, zwey Hörnern und zwey Fagotten. Oft ist noch eine Flöte, eine oder zwey Trompeten, ein Quartfagott oder ein Serpent damit verbunden."

38 Josef Fahrbach, *Neueste Wiener Fagott Schule*, Vienna: Diabelli 1840, 15. "Der Tenor=Fagott wird nur für das Solo und gleich dem Quart=Fagotte selten mehr gebraucht."

39 Berlioz/Strauss, *Instrumentationslehre* (see n. 34), 213. "Sein Klang hat weniger Empfindsamkeit, aber mehr Kraft als der des Englischen Hornes, und würde in der Militärmusik von vortrefflicher Wirkung sein."

40 Nemetz, *Allgemeine Musikschule für Militär Musik* (see n. 1), 53.

instruments and unconventional instrumentation are used. It is worth considering whether the tenor bassoon played a role in this music.

A few remarks on the tenor bassoon GdM I. N. 169 (SAM, Vienna) concludes this study. This instrument is listed as FT125 in the "Instrument Catalogue of Small-Sized Bassoons, ca. 1700–ca. 1915" (October 2024) of the SNSF research project of the Schola Cantorum Basiliensis but has not yet been studied in depth and little information is available about it.[41] The bassoon belongs to the Gesellschaft der Musikfreunde Vienna and is now on loan to the Sammlung alter Musikinstrumente in Vienna (Kunsthistorisches Museum). Eusebius Mandyczewski describes it in his book *Zusatz-Band zur Geschichte der K. K. Gesellschaft der Musikfreunde in Wien* (1912) under inventory number 169: "Quintfagott, 89 cm long, the wooden bore 152 cm, brass fittings, 8 finger holes, 9 keys. Stamped.: F. Wussinger Klagenfurt. Gift of the director Dr. E. Plutzar 1898."[42] A small black and white photo of this instrument is also included. The nine-keyed quint bassoon was made by the wind instrument maker Franz Wussinger of Klagenfurt (Austria) and is dated ca. 1810–1840.[43] An initial inspection shows that this instrument has been played, which can be seen from the wear on the pads and the many scratches on the keys. This tenoroon is badly damaged, with a crack of several centimetres in the bell. In this condition the instrument is unplayable at present and would need to be restored. It has a long history in the Viennese tradition, which could perhaps be traced through detailed research, thus providing insight into the use of small bassoons in a key area of repertoire.

41 See "Instrument Catalogue" (n. 35).

42 Eusebius Mandyczewski, *Zusatz-Band zur Geschichte der K. K. Gesellschaft der Musikfreunde in Wien: Sammlungen und Statuten*, Vienna 1912, 170. "Quintfagott, 89 cm lang, die Holzbohrung 152 cm, Messingbeschläge, 8 Grifflöcher, 9 Klappen. Gez.: F. Wussinger Klagenfurt. Geschenk des Direktionsmitgliedes Dr. E. Plutzar 1898."

43 Bernhard Trebuch, "Der Musikinstrumentenbau in Kärnten bis um 1840. Eine Darstellung anhand erhaltener Instrumente", in: *Musicologica Austriaca* 10 (1991), 32.

Fagottino Players: Evidence of Historical Performance Practice in 18th- and 19th-Century Bassoon Repertoire

Giovanni Battista Graziadio

Despite the large number of surviving instruments located in museums and private collections, more than 130 to date, there is no evidence of bassoonists who performed exclusively on small-sized bassoons for their whole career. Similarly, flute or clarinet players are not expected to perform exclusively on a piccolo or a specific clarinet size. The bassoon players referred to in this article are mentioned in Austrian, Italian and French sources, which mainly describe talented musicians who were active not only on the full-size bassoon but also on the fagottino or tenoroon.[1] In music history literature, the existence and use of these instruments is barely mentioned, yet examples and testimonials offer much upon which to reflect. In fact, these records report on original music for this instrument, and describe a music practice which is now lost.

An important tenoroon player in Vienna

Valentin Czeyka (1769–1834) was a Bohemian musician born in Prague and is notable for his direct contact with Ludwig van Beethoven. Czeyka arrived in Vienna in 1802, when he was chosen as first bassoonist at the Theater an der Wien, a position in which he remained for over 19 years. Beethoven wrote important passages for this solo bassoonist, for example in the Symphony No. 4 (1806), which contains the well-known finale with an exposed staccato section, used nowadays in bassoon orchestral auditions. *Leonore/Fidelio*, the Violin Concerto, and the Symphonies 5, 7, and 8, to name a few, have many

1 For more information and explanation of the nomenclature adopted in this study please visit: https://www.historical-bassoon.ch/glossary/ (23 September 2023).

demanding passages in the first bassoon part, written by Beethoven for Czeyka. While Beethoven's music suggests that Czeyka must have been a remarkably skilled instrumentalist, historical sources report that he also performed as a soloist, not only on the full-size bassoon but also on the tenoroon, for which he composed some *Variationen*.[2]

The *Wiener Allgemeine musikalische Zeitung* reported that Czeyka performed his own variations for "Tenorfagott" on two occasions: for a benefit concert in 1815, and in a farewell concert in honour of the famous soprano Angelica Catalani, in 1821. In this chronicle, the instrument is described as being smaller than a regular bassoon and as having a sonorous and pleasant tone.[3] Perhaps he was playing on an instrument by the well-known builder Kaspar Tauber (*fl.* 1798–1829), who was active in Vienna during the same period?[4] The fact that Czeyka chose to demonstrate his skill by playing his own composition on a tenoroon also lends some perspective on the use of small-sized bassoons. Historical references to Czeyka's music, such as in the *Biographie universelle des Musiciens* by François-Joseph Fétis, state that he wrote seven bassoon concertos and several military marches, which are "still available in manuscript".[5] Unfortunately, most of his music has not yet been located, including his variations for "Tenorfagott".

According to Albrecht, Czeyka's life changed radically in 1818 with the arrival in Vienna of the young bassoonist August Mittag from Dresden. Mittag held important positions as principal bassoonist at the Burgtheater and the

2 Information about Czeyka's life and his collaboration with Beethoven is taken from: Theodore Albrecht, "Valentin Czeyka im Theater an der Wien: Der Solofagottist in Beethovens mittlerer Schaffenszeit", 3 parts, in: *Wiener Oboen-Journal* 40 (Dec. 2008); 12–15 (part 1); 41 (Mar. 2009), 8–11 (part 2); 42 (June 2009), 12–17 (part 3). Online: http://www.wieneroboe.at/journal.php (26 October 2023).

3 Ibid.

4 See "Instrument Catalogue of Small-Sized Bassoons, ca. 1700–ca. 1915" (October 2024) in this publication. Four tenoroons by Tauber could be located. For further information about Tauber see: William Waterhouse and Lyndesay G. Langwill, *The New Langwill Index: a Dictionary of Musical Wind-Instrument Makers and Inventors*, London: Bingham 1993, 395.

5 Woodrow Joe Hodges, *A Biographical Dictionary of Bassoonists Born Before 1825*, 2 vols., PhD University of Iowa 1980, 190–191.

Wiener Hofkapelle, and as professor at the Konservatorium der Gesellschaft der Musikfreunde.[6] No longer 'politically supported', Czeyka had to find new employment, and, at the age of 52, became a military bandmaster; in 1822 he accepted the position of Kapellmeister in a Royal Austrian line regiment, and was forced to leave Vienna to be sent to Naples. Once there, he may have met local bassoonists such as Giuseppe Del Cupola (1802–1855/56), and Raffaele Giuseppe Sabatino De Rosa (ca. 1804–after 1854), who was also a renowned wind instrument maker.[7] It is noteworthy that both Del Cupola and De Rosa were virtuoso bassoonists who gave concerts with small-size bassoons.

Cultural, political and commercial connections between Austria and Naples trace back well before the nearly three decades of Austrian rule in the early 18th century. Religious congregations, including those made up exclusively of foreigners, were a link between German-speaking countries (like Austria) and Naples, bringing artisans from guilds of different trades together. These congregations also facilitated political arrangements and at the end of the 18th and the beginning of the 19th century saw the advent of mercenaries with their marching bands and/or music masters.[8]

Fagottino and Tenoroon players from Naples to North Italy

Giuseppe Del Cupola, often written as "Del Cupolo", was a virtuoso Neapolitan bassoonist, fagottino player and teacher who was employed by the Orchestra of the Real Teatro del Fondo in Naples. According to a concert advertisement from 3 December 1838, Del Cupola performed "Variazioni per fagotto con accompagnamento d'orchestra" there, as well as a cavatina from the opera *La Parisina* by Donizetti, playing a G tenoroon called "quintino

6 Albrecht, "Valentin Czeyka" (see n. 2); part 3, 15, 17.

7 References and biographical information on these two Neapolitan bassoonists are taken from the author at: https://www.historical-bassoon.ch/fagottini-bassoonists-and-builders-in-18th-and-19th-century-naples/ or https://ark.dasch.swiss/ark:/72163/1/0845/3b3mMLnPRdKORHuqxWZ33wq.20230515T103741096108527Z (3 September 2023).

8 See this publication dedicated to the description of such a congregation: Michael Toll, *Die deutsche Nationalkirche S. Maria dell'Anima in Neapel,* Freiburg im Breisgau: Herdersche Verlagshandlung 1909.

fagotto". The concert followed a performance of Donizetti's *L'Elixir D'Amore* in which Del Cupola was also involved.[9]

Due to financial difficulties, he obtained permission to perform in the theatre during its opera season and to raise money for his own benefit. In such a situation, it was important to carefully choose how to impress the audience in order to gather support and raise funds. Del Cupola's decision to use a tenoroon in G is significant and underscores the level of virtuosity with which these instruments were played, confirming that this was a potential winning option from his point of view.

As with Czeyka in Vienna, the bassoonist's practice of performing his own compositions along with themes and variations is also documented in Naples; in this case Del Cupola decided to perform these on a full-size bassoon. The rearrangement of the cavatina, written specifically for tenoroon with orchestral accompaniment, is part of a musical practice and a genre that became quite common during the 19th century. In fact, such compositions, along with instrumental arrangements of operatic music – the so-called instrumental potpourris – were popular with many soloists at that time.

It is very likely that Del Cupola performed his cavatina arrangement on an instrument made by his friend and former classmate Raffaele De Rosa, who was himself an excellent bassoonist, associated with the Schindler Swiss Regiment Number 2, as well as being a teacher and a very respected woodwind

9 This information is written inside "Programma Giornaliero / *Degli spettacoli, balli, feste, concerti ed altri divertimenti pubblici*" N° 199, Napoli, Lunedì 3 Dicembre 1838. On the front page of this 4-sided newspaper or advertising pamphlet, it states: "Real Teatro del Fondo – SERATA D'INTROITO A BENEFIZIO DEL SIG. / GIUSEPPE DEL CUPOLA / PROFESSORE DI FAGOTTO / si rappresenta il melodramma giocoso in / due atti, intitolato / L'ELIXIR / D'AMORE / Poesia del signor Felice Romani / Musica del cav. *Gaetano Donizzetti* […] / Il suddetto professore eseguirà dopo il 1° ed il secondo atto dell'opera, delle variazioni per fagotto con accompagnamento d'orchestra, e col quintino fagotto eseguirà una cavatina del mastro Donizetti nell'opera LA PARISINA […]".

instrument maker.[10] In the "Newspaper of the Two Sicilies" dated 1838, an advertisement for De Rosa's 'professions' was published:[11]

> The manufacturer, bassoon and fagottino professor Raffaele De Rosa, residing at the warehouse in Rua Catalana No. 32, first floor, hereby announces to the public that, for many years, he has been working on musical instruments made of wood of all kinds; […] Woodwind instruments: clarinets, piccolos, flutes, piccolo flutes, oboes, cors anglais, contrabassoons, bassoons, fifth bassoons, third bassoons, cimbassos […]. Finally, the aforementioned De Rosa also constructs reeds for bassoon, oboe, cor anglais, and clarinet." (Translation by the author)

To date, this is the first and only statement from a bassoonist of the past who declared himself to be a professional bassoon and fagottino player, as well as a maker of these instruments. A tenoroon in G made by De Rosa is located in the Victoria & Albert Museum in London (FT80).[12]

De Rosa was not only Del Cupola's friend, but also the bassoon teacher of his son, Vincenzo Antonio Maria Del Cupola (born 12 June 1833), who also became a well-known bassoon virtuoso and teacher. As reported in Vincenzo's biography, his father Giuseppe gave him his first music and bassoon lessons;

10 The comment "Raffaele De Rosa Egregio sonator di fagotto" ('Raffale De Rosa, excellent bassoon player') is found in Francesco Florimo, *La scuola musicale di Napoli e i suoi* conservatorii, Napoli, 1881, vol. IV, XIX.

11 Francesco Nocerino, "Costruttori di strumenti musicali per banda a Napoli nell'Italia preunitaria", in: Federico Fornoni and Giovanni Polin (ed.), "Feste e bande nel sud Italia, fra storia e tradizione", in: *Quaderni del Conservatorio Carlo Gesualdo da Venosa*, 4 (2021–2022), Potenza: Conservatorio di Musica Carlo Gesualdo da Venosa 2022, 189–219: 202. "Il fabbricante, e professore di fagotto e fagottino Raffaele De Rosa, domiciliato nel fondaco Rua Catalana n. 32, primo piano fa noto al pubblico, come non solo per lo spazio di molti anni ha lavorato de' strumenti musicali di legno di ogni specie; […] Strumenti di legno: clarinetti, quartini, flauti, terzini, ottavini, oboé, corni inglesi, contrafagotti, fagotti, quintini di fagotti, terzini di fagotti, cimbassi […]. Infine il suddetto de Rosa costruisce anche pive di fagotto, d'oboé, di corni inglesi, e di clarinetto."

12 See: https://collections.vam.ac.uk/item/O249372/tenoroon-de-rosa-r/ (23 September 2023).

Vincenzo may have started learning bassoon on the same tenoroon played by his father.[13]

De Rosa studied at what became the Neapolitan Collegio San Sebastiano (or Real Collegio di Musica, an institution which previously included the famous Neapolitan schools La Pietà dei Turchini, Sant'Onofrio a Capuana, and Santa Maria di Loreto).[14] Both De Rosa and Giuseppe Del Cupola studied primarily with Giacomo Moritz (or Moriz), who was first bassoonist of a military band called "del primo Reggimento dei granatieri della Guardia". Because of Moritz's activity in the military woodwind music scene, and his subsequent musical employment at the Royal Chapel, as well as being bassoon teacher at the Real Collegio di Musica, he may have had contact with the famous wind band master and bassoonist Czeyka when the latter was in Naples.[15]

While an 1879 Neapolitan treatise on wind band instrumentation by Domenico Gatti explains the qualities of the fagottino and its use, it also underscores its former use within the wind music scene.[16] It is possible that Czeyka was one of the first to play a smaller bassoon in this context. It is unlikely, however, that he introduced Neapolitan bassoonists to small-sized bassoons, as a tradition of these instruments being played already existed in Naples in the previous century.

13 Bibliographical references for Vincenzo Antonio Maria Del Cupola are available at https://www.historical-bassoon.ch/fagottini-bassoonists-and-builders-in-18th-and-19th-century-naples/ or https://ark.dasch.swiss/ark:/72163/1/0845/3b3mMLnPRdKORHuqxWZ33wq.20230515T103741096108527Z (3 September 2023).

14 See Salvatore Di Giacomo, *I quattro antichi Conservatori di Musica a Napoli. Il Conservatorio di S.Onofrio a Capuana e di S.M della Pietà dei Turchini*, Palermo: Remo Sandron editore 1924 and *I quattro antichi Conservatori di Musica a Napoli. Il Conservatorio dei Poveri di Gesù Cristo e quello di S.M di Loreto*, Naples: Remo Sandron editore 1928.

15 Information about Giacomo Moritz is taken from the following sources: 1) *Almanacco della Real Casa e Corte per l'anno 1830*, Napoli: Stamperia Reale 1830, 103; 2) Adrian von Steiger, "Aspects of the Late Keyed Trumpet: Some New Evidence", in: *Historic Brass Society Journal* 28 (2016), 121–134: 126, 133; 3) Rosa Cafiero and Marina Marino, "La musica della Real Camera e Cappella Palatina di Napoli fra Restaurazione e Unità d'Italia. II: Organici e ruoli (1815–1864)", in: *Studi Musicali* 28 (2009), 133–206: 186.

16 Domenico Gatti, *Gran trattato d'istrumentazione storico-teorico-pratico per banda*, Napoli: Steeger 1829, 69–71.

Not only were small bassoons already present in the music of Neapolitan composers such as Porpora, Perez, Anfossi and Cimarosa, but the oldest surviving Neapolitan bassoon which has been located is a fagottino (octave) made by Cristofaro Custode (ca. 1768–post 1821), a very active woodwind instrument maker.[17] This 4-key fagottino (FT79) is now preserved in the Musical Instrument Museum of Rome; each joint is clearly stamped "CUSTODE IN NAPOLI" (Fig.1a / 1b).[18]

A positive account of Custode's instruments, and of his bassoons in particular, was written by the music historian Franz Sales Kandler, who worked in Naples in the service of the Austrian army between 1821–1826. He reported that Custode's bassoons were of the highest quality, and in great demand within the Austrian regiments in the city.[19]

It is possible that an instrument such as the one that survives was used during a performance of *Artemisia regina di Caria*, composed by Domenico Cimarosa and premiered at the Teatro San Carlo in Naples on 12 June 1797.[20] The theatre could count on a choice of woodwind players specialized on the bassoon and quite active at that time, such as Vincenzo Conti, Raffaele Cuomo, Francesco Ricupero and Gioacchino D'Alessio.[21] These players may have been familiar with smaller bassoons, and may have also begun their bassoon studies on these instruments. Unfortunately, there is no record associated with Nea-

17 More information about this Neapolitan repertoire is available on https://www.historical-bassoon.ch/the-range-a-case-study-in-neapolitan-repertoire/. See also Donna Agrell's contribution to this publication. Information about Cristofaro Custode and bibliographical references about Vincenzo Antonio Maria Del Cupola are available on https://www.historical-bassoon.ch/fagottini-bassoonists-and-builders-in-18th-and-19th-century-naples/ and in Nocerino, "Costruttori di strumenti" (see n. 11), 199–200.

18 *Museo degli Strumenti Musicali di Roma*, inventory number 773 / 231, 4 keys, boxwood, total length: 62 cm.

19 Thomas Drescher, "Franz Sales Kandler über den Instrumentenbau Neapels im Jahr 1826", in: *Glareana* 49/1 (2000), 292. See also: Nocerino, "Costruttori di strumenti" (n. 11), 199–200.

20 "Fagottini" is indicated in I-Nc, Rari 1.3.12-13; "Fagottino" in the manuscript copy kept in I-Rmassimo (RISM ID no.: 858000056). Both indications can be seen in the choir *Viva Artemisia* in Act I – Scene I.

21 More details about Neapolitan musicians specialized on bassoon will be available in the PhD study by this author, "The use of the bassoon in Naples until 1800".

Fig. 1a: Fagottino FT79 made by Cristofaro Custode, Museo Nazionale degli Strumenti Musicali a Roma; **1b:** maker's stamp. Photos by author.

politan musical institutions which specifies the use or the purchase of small-size bassoons, even though students started lessons on the instrument at a very young age.[22]

Giacomo Pagnoncelli was another excellent product of the Neapolitan bassoon school, as he quickly became a celebrated bassoonist with an international performing career and teaching activities. Newspapers and other

22 See Guido Olivieri, "Aggiunte a La scuola Musicale di Napoli di F. Florimo: i contratti dei figlioli della Pietà dei turchini nei protocolli notarili (1677–1713)", in: Rosa Cafiero and Marina Marino (ed.), *Francesco Florimo e l'Ottocento musicale, Atti del Convegno* (Morcone, 19–21 aprile 1990), Reggio Calabria: Jason Editrice 1999, 717–752: 729, 734, 736; Rossella Del Prete, *Le forme sonore di un'economia creativa, il mercato musicale a Napoli in età moderna (secc. XVII-XIX),* Benevento: Kinetes 2022, 252 and 254.

archival documents in the period from 1837 to 1849 provide significant information about his successful career. Nothing more about his biography has been traced so far, apart from the recurring reference to his being from Naples, as found in advertisements of his activity as "Professore di Fagotto Giacomo Pagnoncelli Napoletano".[23]

In the *Gazzetta Musicale di Milano*, on 23 June 1847, it was reported: "[…] Pagnoncelli played a potpourri on the fagottino that he had arranged himself, on themes from [Verdi's] *I Lombardi;* he received applause and deserved it in the cantabile passages; […]."[24] This comment is in line with Antonio Tosoroni's observations on smaller bassoons, which are found in his treatise.[25] There he describes the "piccolo fagotto or fagottino" (also called "quartino di fagotto") as particularly suitable for playing beautiful cantabile solos.

Given the examples of Del Cupola and De Rosa, it is likely not a coincidence that virtuoso bassoonists from Naples in the first half of the 19th century were also virtuoso performers on the fagottino or on other smaller-sized bassoons.[26] Pagnoncelli, who gave concerts with singers celebrated by critics, probably performed his own potpourri arrangements of opera arias as well as his own compositions, perhaps using full-size and small-size bassoons made by Raffaele De Rosa.

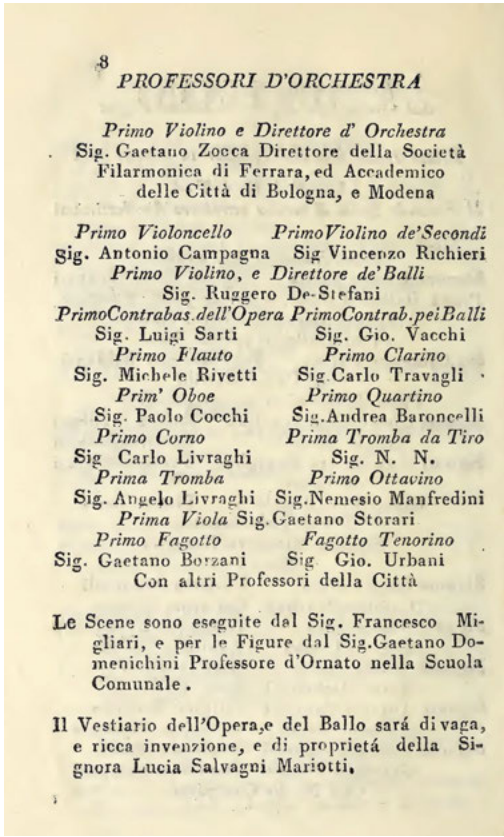
Turning our attention from Naples to the northern Italian city of Ferrara, it was possible to gather information about the activity of the bassoonist Giovanni Urbani. Many opera librettos from 1816 to 1830 indicate his presence in the orchestra as first bassoonist, and even as "Fagotto Tenorino". In the libretto of *Il Trionfo della Fede/Gli Arabi nelle Gallie* (Ferrara 1830) by Giovanni Pacini, Urbani is mentioned as a tenoroon player, along with his colleague Gaetano

23 For more bibliographical references see also: https://www.historical-bassoon.ch/fagottini-bassoonists-and-builders-in-18th-and-19th-century-naples/ (25 October 2023).

24 "[…] Il Pagnoncelli suonò col fagottino un pot-pourri da lui stesso intessuto sopra motivi dei Lombardi: ebbe plausi e li meritò nei cantabili; […]".

25 Antonio Tosoroni, *Trattato Pratico di Strumentazione per le Orchestre, le Bande e le Fanfare*, Firenze: Guidi 1850.

26 In fact, the Neapolitan treatise on wind band instrumentation by Domenico Gatti from 1879 (see n. 16), describes the qualities of the fagottino, and why and how it should be used, including how it should be notated, proving its former use within the Neapolitan wind music scene.



8

PROFESSORI D'ORCHESTRA

Primo Violino e Direttore d' Orchestra
Sig. Gaetano Zocca Direttore della Società Filarmonica di Ferrara, ed Accademico delle Città di Bologna, e Modena

Primo Violoncello — Sig. Antonio Campagna
Primo Violino de'Secondi — Sig Vincenzo Richieri
Primo Violino, e Direttore de'Balli — Sig. Ruggero De-Stefani
PrimoContrabas.dell'Opera — Sig. Luigi Sarti
PrimoContrab.pei Balli — Sig. Gio. Vacchi
Primo Flauto — Sig. Michele Rivetti
Primo Clarino — Sig.Carlo Travagli
Prim' Oboe — Sig. Paolo Cocchi
Primo Quartino — Sig.Andrea Baroncelli
Primo Corno — Sig Carlo Livraghi
Prima Tromba da Tiro — Sig. N. N.
Prima Tromba — Sig. Angelo Livraghi
Primo Ottavino — Sig.Nemesio Manfredini
Prima Viola Sig.Gaetano Storari
Primo Fagotto — Sig. Gaetano Borzani
Fagotto Tenorino — Sig Gio. Urbani
Con altri Professori della Città

Le Scene sono eseguite dal Sig. Francesco Migliari, e per le Figure dal Sig.Gaetano Domenichini Professore d'Ornato nella Scuola Comunale.

Il Vestiario dell'Opera,e del Ballo sará di vaga, e ricca invenzione, e di proprietá della Signora Lucia Salvagni Mariotti.

Fig. 2: Excerpt from the libretto of *Il Trionfo della Fede/Gli Arabi nelle Gallie* (Ferrara 1830), University of Toronto, Thomas Fisher Rare Book Library, lib 00105. Public domain.

Borzani as first bassoonist (Fig. 2). Numerous scores of this opera exist, but the version performed in Ferrara in 1830 has not been located. It is difficult to speculate on what instrument Urbani was playing. One could hypothesise the presence of a tenoroon part in the score, but perhaps he was simply playing the cor anglais part on a tenor bassoon. This last possibility is supported by the fact that, while Urbani is usually mentioned in librettos as first bassoonist, some mention his name but omit his function.[27] These curious cases occur when the

27 Urbani performed as first bassoonist in operas by Rossini such as *Il Turco in Italia* (Ferrara 1816), *La Cenerentola* (Ferrara 1818), *Eduardo e Cristina* (Ferrara 1821), *La Zoraide* (Ferrara 1822), *Ciro in Babilonia* (Ferrara 1823), *La Gazza Ladra* (Ferrara 1823), *La Zelmira* (Ferrara 1825).

first bassoon role is given to another musician and no cor anglais player is specified.[28] This is also the case in *Il Trionfo della Fede* by Pacini, except that Urbani's name is preceded by "Fagotto Tenorino".

The practice of playing the cor anglais part with a bassoon can be found as early as 1781, for example in an aria from *L'Olimpiade* by Francesco Bianchi, performed at the Teatro alla Scala in Milan. The bassoon or cor anglais is clearly specified, probably according to what was available.[29] As Gatti remarked in his treatise of 1879 (following Berlioz's from 1843), the fagottino can replace the cor anglais, including in wind-band music. In 1846 the *Gazzetta Musicale di Milano* even described how wind bands were constituted in Austria, quoting Fahrbach, who said that two fagottini were often used in the manner of "corni da caccia".[30]

Another compatriot and contemporary of Urbani was the multi-talented Giovanni Andreis (or Andrei), who lived in Modena, near Ferrara and Bologna. The information collected describes his activity from 1822 to 1834. Andreis was a student of the bassoonist Joseph Binder, with whom he played several times.[31] The journal *The Harmonicon,* published in London in June 1826, noted that Andreis was one of those "extra-ordinary men in their several departments". Indeed, he was not only an excellent bassoonist but also a talented multi-instrumentalist: he was first oboe player in the "Battaglione Estense" from 1822 to 1824; in the libretto of *Aminata e Argira* (Reggio Emilia 1823) by Mercadante and in that of *La Zelmira* (Reggio Emilia 1824) by Rossini, he is mentioned as first oboe and cor anglais player; he was also a good violinist, and is in fact mentioned in the libretto of *Matilde di Shabran* by

28 For example, the libretto of Rossini's *Aureliano in Palmira* (Ferrara 1816) or the one of *Mosè in Egitto* (Ferrara 1823) does not specify Urbani's role.

29 This indication is visible in Act 1, Scene IX in Licida's aria of *L'Olimpiade* performed in Milano at the Teatro alla Scala (26 December 1781); F-Pn, D-1081 (RISM ID no.: 840013524), P-La.

30 "Organizzazione della musica militare Austriaca di Giuseppe Fahrbach Capo-Banda", in: *Gazzetta Musicale di Milano*, 5/505 (13 December 1846).

31 Records indicate that Joseph Binder was a bassoonist in Modena (Italy) in November 1825, along with Candidus Amici and the first bassoonist, Giovanni Andreis. Binder was Andreis' teacher. See Hodges, *A Biographical Dictionary* (n. 5), 45, 46, 115.

Rossini (Modena 1825) as first violinist of the ballet; he even worked as a copyist at the Modena Theatre.[32]

Included in the assortment of instruments that Andreis played were also small bassoons. A poster advertising an evening concert on 13 January 1826 in the Modena Theatre announced the following: "Gran Rondò nell'Andromaca del Maestro Mercadante Suonato col quartino Fagotto dal Signor Giovanni Andreis". This event featured many soloists, such as the singer Vincenzo Marchesi, who was to perform solo pieces; Andreis, who seems to have been one of the most important, decided to play only one piece with a possible tenoroon in F, here called "quartino Fagotto" (Fig. 3).[33]

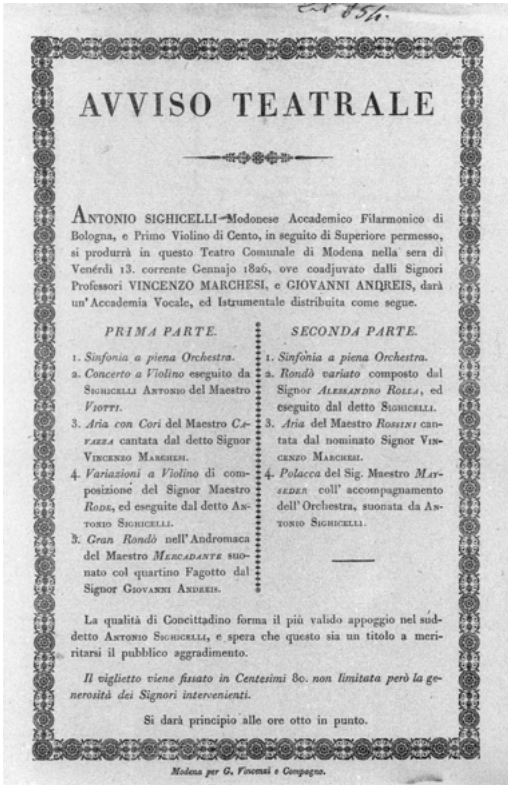
Unfortunately, no record of an opera entitled *Andromaca* by Mercadante exists, while one by Paisiello does; in any case the music played by Andreis has not been located. Like his contemporaries, he rearranged music from operas to showcase his talent, and may have used a tenoroon on other occasions. Although other sources describing the same concert use the term "fagotto", it is possible that Andreis also used a tenoroon.[34] An example can be found in a chronicle from 25 December 1834, which praises the concert given by Andreis at the Società del Casino di Bologna. There it is reported that he played a potpourri with "fagotto obbligato", but no specific information is given about the instrument he played.[35]

32 See Antonio Carlini, "Le bande musicali nell'Italia dell'Ottocento: il modello militare, i rapporti con il teatro e la cultura dell'orchestra negli organici strumentali", in: *Rivista Italiana di Musicologia* 30/1 (1995), 85–133: 98. Biographical data about Andreis is also taken from Hodges, *A Biographical Dictionary*, 46 (see n. 5). See Fabrizio Bugani, "Musica e teatro in un archivio di frammenti del Sette e Ottocento", in: *Quaderni Estensi*, I/0, Modena: Mucchi Editore 2009, 186–187: 173, 187. Online: http://www.quaderniestensi.beniculturali.it/QE/bugani.pdf (25 October 2023).

33 Gherardo Ghiradini, Appendice doumentaria "La 'Direzione agli spettacoli' del Teatro vecchio negli atti dell'Archivo Storico Comunale di Modena", in: Aldo Borsari (ed.), *Teatro musica e comunità: da Modena capitale a Modena italiana*, Modena: Archivio storico, Comune di Modena, Assessorato alla cultura e beni culturali 1996, 24.

34 The same concert given on 13 January 1826 is reported in Alessandro Gandini, *Cronistoria dei teatri di Moderna dal 1539 al 1871*, Parte Prima, Modena: Tipografia Sociale 1873, 287.

35 Information reported in the weekly journal *Teatri Arti e Letteratura*, N. 564, vol. 22, Anno 12esimo, Bologna: Tipografia della Volpe, 3 January 1835.



AVVISO TEATRALE

ANTONIO SIGHICELLI Modonese Accademico Filarmonico di Bologna, e Primo Violino di Cento, in seguito di Superiore permesso, si produrrà in questo Teatro Comunale di Modena nella sera di Venérdì 13. corrente Gennajo 1826, ove coadjuvato dalli Signori Professori VINCENZO MARCHESI, e GIOVANNI ANDREIS, darà un' Accademia Vocale, ed Istrumentale distribuita come segue.

PRIMA PARTE.

1. *Sinfonia a piena Orchestra.*
2. *Concerto a Violino* eseguito da SIGHICELLI ANTONIO del Maestro *VIOTTI.*
3. *Aria con Cori* del Maestro *CAVEZZA* cantata dal detto Signor VINCENZO MARCHESI.
4. *Variazioni a Violino* di composizione del Signor Maestro *RODE*, ed eseguite dal detto ANTONIO SIGHICELLI.
5. *Gran Rondò* nell' Andromaca del Maestro *MERCADANTE* suonato col quartino Fagotto dal Signor GIOVANNI ANDREIS.

SECONDA PARTE.

1. *Sinfonia a piena Orchestra.*
2. *Rondò variato* composto dal Signor *ALESSANDRO ROLLA*, ed eseguito dal detto SIGHICELLI.
3. *Aria* del Maestro *ROSSINI* cantata dal nominato Signor VINCENZO MARCHESI.
4. *Polacca* del Sig. Maestro *MAYSEDER* coll' accompagnamento dell' Orchestra, suonata da ANTONIO SIGHICELLI.

La qualità di Concittadino forma il più valido appoggio nel suddetto ANTONIO SIGHICELLI, e spera che questo sia un titolo a meritarsi il pubblico aggradimento.

Il viglietto viene fissato in Centesimi 80. non limitata però la generosità dei Signori intervenienti.

Si darà principio alle ore otto in punto.

Modena per G. Vincenzi e Compagni.

Fig. 3: Concert poster featuring Andreis with a tenoroon (see nr. 5 "col quartino Fagotto"), Reproduction authorized by Archivio Storico del Comune di Modena under protocol number 228442/2024. Photo by author.

A tenoroon in F (FT47) by the woodwind maker Giacinto Riva, active in Ferrara and Bologna from ca. 1839 until ca. 1872, survives in the Musikinstrumentenmuseum der Universität Leipzig.[36] This may support the possibility that such instruments were still in use years later in the same musical environment in which Urbani and Andreis performed.

36 Waterhouse, *New Langwill* (see n. 4), 330. Information and pictures of FT47 can be consulted here: https://zenodo.org/record/3246324#.YCZXcC9h2L8 (11 July 2023).

Small-sized bassoon performance in France

The numerous surviving examples of fagottini and tenoroons, made by the most important makers in France between the 18th and the 19th centuries, are strong evidence of their use in that country.[37] Especially in the 19th century, the presence of bassoon makers like Savary jeune, also a skilled player, influenced significant use of these smaller instruments by other famous virtuoso players (a situation comparable to that of De Rosa and the Neapolitan bassoon community). Savary jeune produced a considerable number of small-sized bassoons, many of which are dated, throughout his years of activity, underlining a continuing demand. James Kopp, writing in this volume, describes a number of models by Savary jeune, contextualises these, and offers further details about their use.

Worthy of mention is the bassoonist Guillaume Fougas (1780–1854), who was in contact with Savary jeune and even played with him in the orchestra of the Théâtre Italien. In the *Agenda musicale* of 1835, Fougas advertised his reeds for "baryton-quarte et quinte de bassoon", clearly also suggesting a proficiency in playing these smaller instruments.[38]

The eminent Eugène Jancourt (1815–1900), an exceptional player and teacher who was also well known for his *Méthode de Basson*, played solos between 1838 and 1840 on a Savary tenoroon "en mi bemol", in the showrooms of the piano makers Mercié and Souffleto.[39] According to Jansen, Jancourt also possessed a fagottino made by Christophe Delusse, and donated it to the Conservatoire National de Musique (before 1864).[40]

Adolphe Reickmans (1795–ca. 1849), who played in the orchestra of the Paris Opera from 1822 to 1833, also performed on a tenoroon in F ("basson

37 See the Instrument Catalogue within this volume.

38 For biographical information on Guillaume Fougas, see Hodges, *A Biographical Dictionary* (n. 5), 235–236 and James Kopp's article in this volume.

39 For biographical information on Eugène Jancourt see Hodges, *A Biographical Dictionary* (n. 5), 349–353. See also James B. Kopp, *The Bassoon,* New Haven and London: Yale University Press 2012, 227.

40 Will Jansen, *The Bassoon: Its History, Construction, Makers, Players, and Music*, 5 vols, Buren: Frits Knuf 1978, 354.

en fa") at the Bordeaux theatre in 1833, as reported by Pierre.[41] Jean Espaignet (1823–1909) was a well-known and excellent bassoonist who studied at the Paris Conservatory, where he obtained a first prize in 1843. Pierre reports that Espaignet played a tenoroon in F at the same theatre in Bordeaux, the city of his birth.[42]

The activity of several accomplished bassoonists across Austria, Italy, and France during the 19th century showcased their skills on both full-sized and small-sized bassoons. The presence of makers of smaller instruments, sometime also fine bassoonists themselves, suggests that small-size bassoon playing was not confined to special or rare occasions, but was in fact a common practice. Moreover, these instruments had an important role in replacing the cor anglais in theatre orchestras and in wind bands.

Notable musicians such as Valentin Czeyka, Giuseppe Del Cupola and others demonstrated their versatility and virtuosity on smaller instruments, often rearranging opera music to impress audiences. This overlooked aspect of music history highlights the significant role played by fagottino and tenoroon players and offers new perspectives on historical bassoon performance practice.

41 For biographical information on Adolphe Reickmans, see Hodges, *A Biographical Dictionary* (n. 5), 535–536. See also: Constant Pierre, *La facture instrumentale à l'Exposition universelle de 1889: notes d'un musician sur les instruments à souffle humain*, Paris: Librairie de l'art indépendant 1890, 25–26.

42 For biographical information on Jean Espaignet, see Hodges, *A Biographical Dictionary* (n. 5), 228–229.

Pedagogical Applications of the Historical Fagottino: A Report from the Classroom

Letizia Viola

The use of the term fagottini, meaning smaller bassoons of all formats, for pedagogical purposes dates back to the 1980s, when bassoon builder Guntrum Wolf (1935–2013) experimented with the development of small bassoons specifically tailored to the needs of children, providing an early entry into the world of the bassoon.[1] This was a major impetus to the development of pedagogy with the help of fagottini in the context of the modern bassoon, but not in the field of historical instruments.

So far, there has been no real upsurge in the use of historical bassoons by children in the field. This is, however, exactly what we would like to achieve, and we have taken the first steps in the SNSF research project "Out of the bass register" (2020–2023).[2] As will be explained, small historical instruments require a new teaching method that enables children to start with a historical fagottino from the very beginning. Due to the simpler mechanics of these small bassoons, listening is a higher priority. Learning melodies and rhythms, distinguishing pitches and intervals, and being able to order and play small rhythmic and melodic motifs, become the primary learning goals. The return of historical tenoroons and fagottini and their associated pedagogy offer new perspectives and opportunities for a new generation of bassoonists.

The description of a new pedagogical approach follows, along with a report on the results achieved thus far within the framework of our research.

1 See the corresponding instruments on the company's current website: https://www.guntramwolf.de/de/instrumente/kinder/fagottini (28 June 2023).

2 See the pedagogical notes on the project's website: https://www.historical-bassoon.ch/pedagogy/ (28 June 2023).

This concept is based mainly on the technical and structural features of our new synthetic instruments, conceived for use by both adults and children.[3]

The historical perspective

The tenoroon, or quart-/quint-bassoon, has existed for as long as full-sized bassoons, and a surprising number of these instruments have survived to the present day.[4] From the 18th to the beginning of the 20th century, all well-known bassoon manufacturers made tenoroons and fagottini in addition to larger instruments. One example is the Heckel company, which advertised a tenoroon in F in its 1907 catalogue (although no specimen is known to exist), or the Evette-Schaeffer and Buffet Crampon companies in France. After that, small bassoons disappeared. At the end of the 19th century, musical dictionaries and bassoon methods referred to small bassoons, but the instruments were no longer in use. In his method from 1887, Julius Weissenborn writes:

> Although the author is not aware of any score in which a quint bassoon is clearly indicated, this instrument was nevertheless frequently used in the orchestra in the 18th to the beginning of the 19th century.[5]

After the First World War, small bassoons were no longer used and remained in museums and private collections. The large number of instruments we located during our research nevertheless presented us with the task of examining the organology, repertoire, and performance practice of these instruments more closely. In the context of questions about the use of instruments, both

3 The term "synthetic instruments" refers to the production with plastic in 3D printing. More on the technical aspects of this process can be found in the article by Ricardo Simian in this volume.

4 See Thomas Drescher's article in this volume. The research within the SNSF project yielded evidence of a total of 136 historical small bassoons. See the instrument catalogue included in this publication.

5 Julius Weissenborn, *Praktische Fagott Schule mit ausführlichen theoretischen Erläuterungen für Lehrer und Schüler*, Leipzig: Forberg 1887, 9. "Obwohl dem Verfasser keine Partitur bekannt ist, in welcher ein Quintfagott direkt vorgeschrieben wäre, so ist dennoch dieses Instrument im 18. bis zu Anfang des 19. Jahrhundert vielmals im Orchester benutzt worden."

historical and current, pedagogical aspects came into focus, which prompted us to create a new teaching approach for the small historical bassoons.

Before describing the development of this concept, the history of the modern fagottino from the 1990s onwards should be briefly summarised, especially with reference to the instrument maker Guntram Wolf, who, as already mentioned, began building modern fagottini in the 1980s. Up until that time it was usual for bassoon manufacturers to build instruments with a special mechanism adapted to children's hands, for use in the pedagogical sector. This was not Wolf's only approach, even from the start. His aim was to perfectly adapt all instruments to the needs of children, i. e. to build instruments that were small, light, and easy to play. In this respect he achieved remarkable success, especially with the development of fagottini (pitched in C, G, and F). Meanwhile, other builders such as Moosman, Fox, and Bassetto, among others, produced instruments specifically designed for children, thus contributing to a greater diversity of available instruments. This increase in the number of fagottini made it possible for children to enter the world of modern bassoon playing at an early age. The existence of a small bassoon, exactly tailored to a child's needs due to its small dimensions, lightness, and mechanical simplicity, led to an upsurge in the teaching of children, and provided impetus to the development of a corresponding pedagogy in the context of the modern bassoon – but not in the field of historical instruments.

Our new synthetic instruments, analogous to the history of modern pedagogy and thanks to Wolf's fagottino, will offer new perspectives and possibilities within historical bassoon pedagogy; until now, historical bassoon study meant an obligatory transition from the modern bassoon to the historical models. With the creation of our new instruments, however, it is possible to start on a historical fagottino with five keys from the age of six, which then naturally leads to the modern bassoon or even keeps young players playing the period bassoon.

A modern pedagogy for the historical bassoon

The lack of small historical bassoons suitable for children has so far made it impossible for the youngest to start with this instrument. The current pedagogy for period bassoon is therefore aimed for young people and adults, the vast majority of whom are students of the modern bassoon or of another in-

strument such as the recorder. Through the previously mentioned SNSF research project, synthetic copies of historical small-sized bassoons were initially made, followed by conventional wooden models.[6] Thanks to these reconstructed instruments, which are small and easy to carry and play, it is now possible to begin early musical training with the historical bassoon.

The discovery and reproduction of small instruments calls for a new teaching concept. This entails a form of holistic pedagogy that demonstrates as many connections between "theory" and "practice" as possible. Due to the simpler key systems of small historical bassoons, ear training demands are even more significant, as intonation must be more carefully controlled than on modern instruments. Greater control over breathing and embouchure is needed. In order to play precisely, pupils must listen more attentively. Notation should not always be the primary medium; aural education should be increasingly integrated into the lessons. Some primary learning goals can be, for example: distinguishing pitches, listening to intervals, and being able to arrange and play small rhythmic and melodic motifs.

Of the more than 130 extant instruments that the research team was able to identify, more than 60 could be measured in detail. Of these, six were selected to be replicated; 3D-printed copies were made, followed by prototypes, and finally four wooden copies were made. The 3D copies and wooden replicas, although very different in size, bore, etc., all share significant flexibility of intonation, a flexibility far beyond that of the modern fagottino as conceived by Wolf. This presents an important technical challenge for a professional adult, let alone a child. This peculiarity of the historical fagottini, which could be an obstacle to ease of playing, can also be seen as a feature that alters and enriches the style of teaching. One could say that it makes a virtue out of necessity! The main issues of bassoon pedagogy – air control and stability of embouchure – which are normally dealt with gradually in the early years, are tackled here and worked on immediately. On the other hand, notation, both of melody and rhythm, takes a back seat. The teaching method must focus on the practice of listening, improvisation, and imitation. In addition, a high degree of stability of the breathing apparatus is required from the beginning.

6 See Ricardo Simian's contribution in this volume or alternatively, the project data located at: https://ark.dasch.swiss/ark:/72163/1/0845 (23 September 2023).

A prerequisite for the introduction of our small historical 3D printed instruments and wooden copies was that all the children with whom we tested our prototypes had already been playing the modern fagottino for at least one year. Given the duration of the project, there would not have been enough time to achieve satisfactory results with pure beginners.

Based on teaching experience with young pupils, I would like to provide a brief reflection of the new method here.[7] One of the first exercises I did with the children was based on listening and imitation. In this way, we were able to produce all the notes of the left hand (c, d, e, f) almost immediately. Later, we moved on to the notes in the butt joint (B, A, G, F). The second exercise consisted of recognising intervals and imitating them in a "parrot" fashion, as well as playing and improvising to enable the children to move comfortably within the range of an octave. After this exercise, they learned the B♭ with the forked fingering of the historical bassoon, which was new for the modern bassoonists.

The results of these first attempts with small historical bassoons in the exercises described above were very positive. The children were very attentive, showed great flexibility, and expressed an interest and desire to continue this path.

The creation of our new small historical bassoons also aroused great interest, both among the professional students at the Schola Cantorum Basiliensis and among international colleagues who had heard about our research. As a result and based on the pedagogical ideas described above, two workshops were prepared and conducted. During these events, the above-mentioned basic ideas and contents of our pedagogical research were further tested.

The first full-day workshop, intended for adults only, took place on 6 September 2022 at the Schola Cantorum Basiliensis. A prerequisite for participation in the "Historical Fagottino Day" was proficiency on and knowledge of the period bassoon. Six participants registered for the course, all of whom were professional historical bassoon players or students.

Two models were used for this workshop: the FT42 Savary tenoroon in F and the FT6 Anonymous tenoroon in G. Four copies of each instrument, two 3D-printed synthetic models (with two bore variations) and two wooden

7 The encounter between one of our synthetic prototypes and the students in my class took place on January 14, 2022.

Fig. 1: 3D and wooden copies FT6 and FT42 used in workshops. Photo: Áurea Domínguez.

models (a prototype and a final version) built by Vincenzo Onida, were at our disposal (see Fig. 1); the corresponding two original instruments were also kindly made available to us by their Swiss owners.[8] Two work groups were then formed using these ten instruments.[9]

Smaller reeds suitable for the small bassoons had already been made, tested and adapted by the teachers. Since the fingerings on the historical bassoon are predominantly those of the classical or baroque model, we began to work directly with the groups. After all the participants had been given an instrument and reed, we started with scales in C, F and B♭ major, first in unison and then in thirds. This was followed by intonation exercises based on the intervals of a fifth, octave, and major and minor thirds.

8 The historical instruments have a slightly oval bore, presumably the result of wood shrinkage over a long period of time. We had both oval and circular bore 3D copies at our disposal. Wooden copies all have round bores, as mandated by their construction. See the contributions by Vincenzo Onida and Ricardo Simian in this volume.

9 The participating teachers were Zoë Matthews and the author.

Fig. 2: Exploring the tenoroon in Workshop 1. Photo: Áurea Domínguez.

The greatest difficulty for the adults, accustomed to blowing into the much wider bore of the large bassoon, was finding the right amount and speed of air for the small instrument, and to produce a warm and pleasant sound. All the participants reported that the main difficulty was producing the more concentrated air flow and corresponding amount of air required, perceived as "resistance", compared to that required by a larger instrument. The next major difficulty was to be able to move relatively easily between the extreme high and low registers. After a few hours, however, the participants had already succeeded in playing some works of medium difficulty.

After the first work phase, the participants changed instruments and groups, and everyone thus had the opportunity to discover the differences between the two models used. At the end of the workshop, the groups were brought together, and a small concert was given. Although far from technically perfect, it was amazingly entertaining and sonorous. Such a small orchestra of bassoons made of different materials and sizes produced an unusually high, shimmering, and fascinating sound, delighting everyone (see Fig. 4).

Fig. 3: Quartet in Workshop 1. Photo: Donna Agrell.

Fig. 4: Presentation in Workshop 1. Photo: Donna Agrell.

Fig. 5: Young group of children in Workshop 2. Photo: Áurea Domínguez.

On 6 November 2022, another workshop was held at the Muttenz Music School: "Fagottino for children". This workshop was only for children and young people and offered the opportunity to become familiar with the small bassoons that were built during the research project. Fifteen children and teenagers were present, comprised of pupils from my own and Zoë Matthews' classes. All of them had previous experience as bassoon players, although some were very young; they ranged from age seven to seventeen (see Fig. 5). Three instrument models were used for this event: FT6 Anonymous tenoroon in G, FT42 Savary tenoroon in F, and the smaller FT30 Scherer fagottino (octave). There were four copies of each instrument, as described above. The

workshop was structured similarly to the one for adults, but with different content. The players were divided into three groups.[10]

This was the first encounter between these children and historical tenoroons! There is no denying that the first steps with instruments new to them was a little complicated. Apart from the major hurdle of experimenting and interacting with an unfamiliar group of pupils and teachers, there were also many challenges with the instruments, which were initially quite problematic for them to control. The biggest challenge, including for the young modern bassoonists, was once again the stability of the air flow. Accustomed to the modern bassoon and blowing into a rubber-lined bore (of Wolf or other instrument models), the students were initially surprised by the flexibility of the smaller historical models. As soon as they were able to produce sounds, however, an infectious enthusiasm arose. Everyone liked the small format and light weight of the fagottini, as well as the variety and beauty of sounds produced, and all found it positive to have fewer keys to deal with.

It was amazing how quickly the children and young people learned the new fingerings of the historical instruments, and the amount of flexibility they were able to develop during the day in terms of embouchure and the more concentrated way of blowing into the instrument, which is fundamentally different from the technique required for the modern bassoons/fagottini.

The future

Everyone who comes to the study of historical bassoon via modern bassoon knows that the current thinking is that an approach to the period instrument is only possible when the technical foundation of playing the modern instrument has been consolidated. The method described here shows that the opposite is plausible.

Institutions of classical music are facing great challenges: the quality of the repertoire performed is generally high, but concert attendance is stagnating, audiences are aging, the musical landscape is becoming increasingly sterile, and state subsidies are declining or must be distributed among more participants in the market. For this reason, it is widely recognised that there is

10 The participating teachers were Zoë Matthews, Donna Agrell, and the author.

Fig. 6: Fagottino fans in Workshop 2. Photo: Áurea Domínguez.

a need to renew the practices of classical music culture. It is therefore indispensable, not only for pedagogical reasons, but also for reasons of aesthetic education in modern times, to be able to offer and convey to children and students the full spectrum of sound available in the history of instrumental music. The small historical bassoons are perfectly suited to differentiated and flexible music-making over the whole historical and stylistic range. They therefore serve as excellent pedagogical tools.

The return of historical tenoroons and fagottini and the pedagogy associated with them may give rise to a new generation of bassoonists, who have not played modern bassoon or recorder before their involvement with historical performance practice, as has been the case in the past, but who have been exposed to the characteristics of the historical bassoon from the very beginning.

Beginning study of modern and historical bassoons simultaneously at a young age could be compared to the bilingualism of children. A child is much more able to imitate the sounds of a language than an adult; if children are able to learn both instruments from an early age, we can expect to admire musicians possessing a kind of musical bilingualism on our concert podiums in the future. It is an effort worth making.

Construction and Reconstruction

Notes About the Reconstructed and Printed Models

Donna Agrell

The four contrasting models of small-sized bassoons replicated in the SNSF project, "Out of the bass register" (2020–2023), were chosen to represent different time periods and regions, and were constructed of three different types of wood: maple, boxwood, and palisander. Access to the original instruments and their present condition were important selection criteria. Finally, there were considerations regarding the secure transport of these historical objects from their environmentally controlled locations in museums as well as, in some cases, across borders (requiring special CITES documentation), to the scanning location in Fürth/Bavaria, Germany.[1]

All four models (see Table 1) were initially 3D-CT scanned and printed in a synthetic material, and then constructed in wood, combining innovative technology with traditional methods.[2] Two more fagottini were scanned and printed in nylon for testing purposes in a smaller project, but were not replicated in wood (see Table 2).[3]

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1 One of the instruments, the FT30 Scherer fagottino, has a small ivory extension of the bocal well, which necessitated specific documentation confirming the origins of this material, and permission to transport the bassoon to a foreign country. CITES is the Convention on International Trade in Endangered Species of Wild Fauna and Flora, regulating international conventions concerning threatened species of plants and wild animals, or products thereof.

2 See Ricardo Simian's and Vincenzo Onida's articles about the methods used for reconstructions, in this volume, as well as our project website: https://www.historical-bassoon.ch/ (1 June 2023).

3 "Neue alte Klangkörper (3D-Fagottini): A multi-method approach to reconstructions of two original eighteenth-century tenoroons with 3D modelling" was carried out at the Schola Cantorum Basiliensis from 1 February–30 July 2020. See project website: https://www.fhnw.ch/plattformen/3dfagottino/ (1 July 2023) or a summary: "Neue alte Klangkörper.3D Fagottini", https://admin.dasch.swiss/project/hp1UIqpKS_Kc7j0c5wh5jA/ontology/fagottino/Documents (7 July 2023).

Two 3D-printed copies were created from each model and represent, respectively:

a) the precise dimensions of the instrument's current internal bores.
b) modified, 'round' bores, necessary for reproductions in wood.[4]

The research team's experiences with the reconstructed instruments in matters of pitch, timbre, bocal and reed choices are briefly described here, and may be of interest to performers and teachers.

Table 1: Four models of reconstructed small bassoons, 3D-printed and in wood.

name / type / material	original bocal	provenance / date / location
FT30 Scherer 5-key fagottino Two 3D-printed models in synthetic material Prototype and final copy in boxwood	No (displayed with another)	Butzbach (DE), ca. 1760–1778 Museum für Gestaltung, Zürich
FT50 Grenser 6-key fagottino Two 3D-printed models in synthetic material Prototype and final copy in maple	No	Dresden (DE), ca. 1806–1813 Musikinstrumenten Museum, Staatliches Institut für Musikforschung, Berlin
FT6 Anonymous 8-key tenoroon Two 3D-printed models in synthetic material Prototype in maple, final copy in palisander Permission given to play this original	Yes	[Vienna / Naples], ca. 1815 Private Swiss collection
FT42 Savary jeune 11-key tenoroon Two 3D-printed models in synthetic material Prototype and final copy in maple Permission given to play this original	Yes	Paris (FR), ca. 1840 Private Swiss collection

4 An explanation by Ricardo Simian about the differences in the bore designs can be found under: "Modified CAD and 3D": https://admin.dasch.swiss/project/hp1UIqpKS_Kc7j0c5wh5jA/ontology/fagottino/Documents (1 July 2023), as well as in his article in this volume. Although the idea of comparing the 'current' with the 'rounded bore' versions seemed like an interesting experiment, differences were hardly noticeable in trials with the team; this was probably due to the fact that all the selected instruments were in very good condition, with little bore deformation.

Table 2: 3D-printed fagottini in a preliminary research project (see n. 3).

name / type / 3D-printed only	original bocal	provenance / date / location
FT44 Scherer 4-key fagottino Two 3D-printed copies in synthetic material	No (displayed with another)	Butzbach (DE), ca. 1760–1770 Museum für Musikinstrumente der Universität Leipzig
FT40 Anonymous 4-key fagottino Two 3-D copies in synthetic material Permission given to play this original	No	[Germany], ca. 1750–1790 Private Swiss collection

Pitches, bocal/reed setups

The issue of pitch is generally foremost in a woodwind instrument maker's mind. Historical woodwind players usually request instruments constructed at set pitches, such as A415 Hz or A430 Hz, even if this differs from the tuning of the original model. Furthermore, commercial builders understand that certain modifications in bore and tone hole dimensions are necessary to meet the standards of today's professional market.

Of the original bassoons that were selected as models from which to print and reconstruct, permission was not obtained to measure the pitches of three fagottini (FT30, FT50, and FT44).[5] Unrestricted access and permission to play was however granted for two tenoroons (FT6 and FT42), as well as for one fagottino (FT40). Consequently, the SNSF research team initially attempted to disregard pitch in their evaluation of the reconstructions. As principled as the team's resolution to ignore pitches seemed, this approach was not particularly helpful when it came to performance trials. The ability to play with other instruments in an ensemble had an important influence on the choice of reeds and bocals. Repeatedly, the team found it impossible to disregard this aspect completely, and bocal/reed set-ups that tended towards certain pitch centres were frequently chosen for practical reasons.[6]

5 The pitch of a woodwind instrument can only be determined by playing it, a practice which is no longer permitted by most museums.

6 See various reed designs used by the research team at: https://www.historical-bassoon.ch/reed-dimensions/ (7 July 2023) or alternatively under "Reed dimensions", https://admin.dasch.swiss/project/hp1UIqpKS_Kc7j0c5wh5jA/ontology/fagottino/Documents (7 July 2023).

An unexpected degree of flexibility was observed in pitch and intonation, especially with the small fagottini. An informal survey of teachers and players strongly confirmed that this flexibility is also present in small dulcian instruments, although this seemed too subjective to be seen as a rule. Upon reflection, this surprising characteristic may be due to the possibility that the team expected to find the same degree of stability as found in full-sized instruments. In any case, the team noted that small-sized bassoons clearly required more concentration on the focus of pitches.

The lack of bocals from historical bassoons is an important subject. This small, fragile part of the instrument, along with a matching reed, directly influences intonation, pitch, and response. Unfortunately, very few original bassoon bocals (of any size) have survived; approximately 25 were documented along with the ca. 60 small-sized bassoons examined.[7] No original reeds were located.

Countless trials were made with various combinations of reconstructed bocals and reeds, which proved to be both time- and material-consuming. Finally, new models for the fagottini FT30, FT44 and FT50 (all missing these original pieces) were crafted, based on measurements of historical examples belonging to other instruments, and necessary modifications were made.

Workable reed designs for the instruments lacking original bocals were predictably the most problematic to create and establishing exact pitches for these reconstructed fagottini was clearly a challenge. However, the two tenoroons involved in the study, FT6 and FT42, had original matching bocals, making reed choices and trials of the reconstructions of these instruments more straightforward: pitch was identified as centred around A430 Hz, with minor deviations. Various bocal and reed setups for the fagottini and tenoroons gave a variety of results, in a wide range from ca. A392 to A435 (!) Hz. In addition, matching pitches were not consistently produced by individual players, even when using the same setup, due to different embouchures and air speeds. Experimentation with bocal and reed setups will continue, as teachers and performers begin their own studies of small-sized bassoons and develop further designs and combinations.

7 See Table 3, "Bocal lengths": https://www.historical-bassoon.ch/measurement-comparisons/ (23 October 2023). Additionally, further bocal research is documented on the website of a smaller project "Neue alte Klangkörper", see n. 3.

Overall, the 3D-printed models were slightly higher in pitch than their wooden counterparts, which can be attributed to slight shrinkage during the printing process. It is also likely that the pitch of the wooden instruments will gradually rise during a longer playing-in phase, particularly after oiling. At present, it is too early to evaluate the final pitches of all the wooden models.

Tone production and timbre

Bassoonists will notice that a unique approach is required to blow into a small instrument; those who are familiar with smaller dulcians will already recognise this sensation, as it requires a different focus of the air stream and of the air speed, or intensity, needed. A smaller reed and narrower bore create more resistance, and naturally require a different approach to using the air column.

Physically, the air stream is not directed as 'low' as a bassoon player may be accustomed, but to another 'higher' location, most easily identified by a feeling in the throat and palate. Some players have reported that an exaggerated feeling of opening or widening the throat – a common sensation for bassoonists – is not required or even advantageous for playing smaller instruments. In fact, this can get in the way of producing certain middle or high notes. The correct sensation may be identified by imagining singing in different registers.

The first step to producing a desired tone quality on an 'easy' note (six-finger G or three-finger c) is to find the ideal air speed and intensity required. Once the result is satisfactory, the air speed can be adjusted for other notes, with particular attention given to forked fingerings such as c♯, e♭, and B♭.

In trials with the four reproduced models, it was observed that the 3D-printed instruments invariably had brighter timbres than the wooden models. This difference can be attributed to the higher density of the synthetic material used in the printed models compared to that of maple wood, the material typically used to build full-sized bassoons, as well as two of the smaller instruments in the study. Two instrument copies, the FT30 fagottino and the FT6 tenoroon, were made of harder materials, namely boxwood and palisander, yet the 3D copies of these instruments were still significantly brighter

in tone than their wooden counterparts.[8] The density of the wood influences not only timbre, but also projection. Accordingly, the player must seek an overall balance between the instrument and bocal/reed choices, all of which have significant influence on the sounding result.

Further reconstructions of these or other models will undoubtedly take place as small-sized bassoons regain popularity with performers and teachers. Ultimately, the choices of bocal/reed setups will have a considerable effect on the tone quality, pitch, and richness of timbre that a performer can produce on a given instrument. Additional designs of these significant parts will develop as more users gain experience.

The reconstruction processes resulted in functioning 3D-printed and wooden instruments, all with printed key sets.[9] Although commercial copies of small-scale bassoons are not yet widely available, various models of fagottini and tenoroons, made of wood or 3D-printed, are likely forthcoming.

8 According to Ricardo Simian, the synthetic material used to print the 3D fagottini is similar in density to boxwood, the material used for the original Scherer FT30. Harder woods are generally used for small woodwind instruments like oboes and clarinets but rarely in bassoon-building, where the softer maple wood is the clear preference.

9 The printed key sets were only partially successful. On the one hand, this method provided a quick solution for the limited amount of time available to reconstruct so many models and copies; on the other, the material used in the printing process was neither ideal for the builder nor player. The keys were not easy to adjust, lacked stability, and the team experienced them as somewhat unreliable while playing. It would be worthwhile to investigate other possibilities in future experiments.

Coming Full Circle: Using Digital Technologies in the Fagottini and Tenoroons Research Projects

Ricardo Simian

Project description

The "Out of the bass register" and "Fagottini and tenoroons" research projects are two complementary endeavours aimed at analysing small-sized bassoons from the 18th and 19th centuries in a holistic manner.[1] Within this multifaceted effort, the reproduction of six selected instruments was also planned, using both digital and traditional manufacturing techniques.[2]

Although additive manufacturing (AM)[3] systems are described in popular culture as science fiction machines like the Star Trek replicator, which creates exact replicas of any desired object by quickly assembling atoms out of thin air, reality is in fact quite different.[4] Digitally manufacturing of precise

1 Donna Agrell and Áurea Domínguez, "Small-sized bassoons from the eighteenth and nineteenth centuries under investigation", in: *Glareana*, 67/2 (2018), 58–74. Online: http://www.gefam.ch/page.php?page=7&lang=de (25 October 2023).

2 The selected instruments for digital fabrication, amongst both projects, were FT40 anonymous, FT44 Scherer, FT50 Grenser, FT6 anonymous, FT42 Savary jeune and FT30 Scherer. Online: https://admin.dasch.swiss/project/hp1UIqpKS_Kc7j0c5wh5jA/ontology/fagottino/InstrumentData (25 October 2023). The last four of these were also traditionally manufactured.

3 Additive manufacturing (AM) terminology can be confusing. At its origins it was called "rapid prototyping" to then be rebaptised as "rapid manufacturing", a term which was later corrected to "additive manufacturing". Most people and many sources refer to it as "3D printing" even though this term officially is only an alternative nomenclature for fused deposition modelling, a specific type of AM (ISO/ASTM 52900). Within this article we opt to use AM.

4 Ben Deighton, "What does the future hold for 3D printing?", in: *Horizon, the EU research & innovation magazine*. European Commission (25 April 2014). See: https://ec.europa.eu/research-and-innovation/en/horizon-magazine/what-does-future-hold-3d-printing

objects is a non-automated process that requires human decisions, fine tuning, digital craftsmanship and physical effort in the final processing of the objects. The digitally manufactured copies produced for this project were made by 3D scanning selected originals, processing 3D models from this data and ultimately crafting them by means of AM. Only the bocals and reeds for these digital instruments were made in the traditional fashion, as currently available AM technology is not particularly suited to the production of thin vibrating pieces such as bocals and reeds. Awaiting further developments in the field, traditional methods remain more efficient, and attempting to use AM would not offer any advantage.

The choice of processing the 3D models which were produced through AM, as opposed to making a direct transfer of the 3D scan data without intermediate steps, created the possibility of performing further interesting experiments, as well as "digitally restoring" the instruments before crafting them. Of particular interest was the researchers' decision to produce twin copies for each instrument, one retaining the ovalisation produced by shrinkage in the wood (something most surviving historical wooden instruments have suffered), and one restoring the round internal bores, as they theoretically were when they came off the maker's lathe. As far as we are aware, this is the only time such a comparison test has been undertaken. We will return to this topic in detail later.

Using the experience gained through the testing of digital replicas as a basis and a reference, traditional copies of four instruments were crafted by Vincenzo Onida. The reamers used to produce these instruments were extracted from the 3D models and produced in laser-cut steel.

This research project therefore comes full circle twice. Firstly, the selected instruments were analysed as they arrived to us (deformed by time), but also with their inner bores re-rounded to their presumed original shape. Secondly, starting from historical originals, we embraced digital methods for advanced analysis, testing and fabrication, and finally closed the loop by crafting traditional wooden copies with enhanced knowledge.

(25 October 2023). Surprisingly, the Star Trek replicator references sometimes make it all the way up to expert talk, such as in this article published by Horizon.

Deformation and damage of the originals

Historical musical instruments tend to suffer various types of damage due to usage and the passage of time. Moisture damage from condensation, as well as mechanical wearing of the parts, can be observed in almost every original wind instrument which has been played. This type of ageing is the main reason that historical woodwind instruments are rarely in playable condition, as opposed to string instruments, which in popular musical imagination become more valuable with time.[5] Even if not played, perfectly preserved woodwind instruments gradually decay. Wood almost inevitably shrinks, deforms, and bends after centuries. Furthermore, since wood is built in layers, one dimension tends to shrink to a different extent than the others, leading to ovalisation of the inner bores (Fig. 1).

Bending and ovalisation are particularly interesting when it comes to making replicas of woodwind instruments. Unless we consider advanced multiple-axe CNC machines or absurd amounts of work by hand, it is virtually impossible to lathe ovalised inner bores that don't follow a straight line.[6] From this perspective, no modern replica of a historical instrument is a real copy, but rather an idealised, rounded and straightened version of the original in its current condition. This leads to further questions and decisions, such as whether these corrections will affect the outcome, and which diameters (major, minor, or average in the ellipse) to use for the replica.

5 Claudia Fritz, Joseph Curtin, Jacques Poitevineau, Hugues Borsarello, Indiana Wollman, Fan-Chia Tao, and Thierry Ghasarossian, "Soloist evaluations of six Old Italian and six new violins", in: *Proceedings of the National Academy of Sciences of the United States of America,* 111 (2014), 7224–7229. Online: https://doi.org/10.1073/pnas.1323367111 (8 November 2023). Claudia Fritz, Joseph Curtin, Jacques Poitevineau, and Fan-Chia Tao, "Listener evaluations of new and Old Italian violins", in: *Proceedings of the National Academy of Sciences of the United States of America,* 114 (2017), 5395–5400. Online: https://www.pnas.org/doi/full/10.1073/pnas.1619443114 (8 November 2023). The topic of the alleged superior quality of old violins exceeds the aims of this paper, yet we would like to contribute to this collateral discussion by inviting the reader to see the research done by Claudia Fritz on the topic.

6 CNC stands for "computerised numerical control", the technique through which automated drills carve parts out of a block of material.

Fig. 1: FT30 Scherer's wing section 3D scan and inner bore showing ovalisation, bending and asymmetries. Images by Ricardo Simian.

Additionally, other irregularities such as cracks, broken edges and drilling scars can be found in all instruments. The unprecedented detail with which computer tomography (CT) scans can display all these elements reaches a degree unattainable by the naked eye. In some cases, however, distinguishing damage from intentional craftsmanship – for instance in the case of hole undercutting – can be difficult. This has deeper implications than may initially be apparent. If the fine tuning of a masterfully crafted instrument depends on small details such as hole undercutting, then deciding whether an irregularity is damage to be repaired or a key element to be copied in detail is fundamental to the outcome. Such a level of inquiry is out of the question when using traditional tools, whereby one drills carefully and hopes for the best; digital manufacturing allows one to choose exactly which crack to replicate or not, and what shape to give to every edge. We shall discuss this painstaking process in the next section.

3D modelling

All six instruments that were digitally re-manufactured for this project were scanned using CT, a high resolution, non-invasive technique.[7] CT technology was not developed for the purpose of measuring musical instruments, but rather for medical purposes, and the resulting data is messier and less straightforward than people usually expect. CT does not identify surfaces, but rather executes a very precise sliced map of densities, and a 3D density map is obtained by combining all the slices. By setting the reading parameters to look for the edges of a particular density one can, for instance, see the bones or a certain soft organ in the body, but not both simultaneously. Similarly, by carefully setting the parameters, it is possible to obtain a very precise 3D map of the wooden surfaces (interior and exterior) of the object placed in the machine, which is what is of interest in this case (Fig. 2).

The usual delivery format for such a 3D map is an STL mesh, which is made up of many small triangles.[8] These triangles work like pixels on a screen. The greater the number and the smaller the triangles are, the better resolution the 3D model will have and the smoother the resulting surfaces will be. This concept may seem crude, yet for all practical purposes, good resolution STLs can perfectly describe smooth and complex shapes and objects (Fig. 3).[9]

STLs have a downside though: they can be very difficult to modify. Regular modifications that apply to the entire mesh, such as scaling the whole object or stretching it in one dimension, are very easy to achieve. On the other

7 CT measurements of museum musical instruments is slowly becoming a standard research and archival tool. See, for instance: Beatrix Darmstädter, Dietmar Salaberger, and Bruce Dickey, *Die Zinken und der Serpent der Sammlung alter Musikinstrumente,* Wien: Kunsthistorisches Museum 2011.

8 STL stands for "standard triangle language" or "standard tessellation language" and was introduced by 3D Systems, the company which filed the first AM technology patent. Nowadays STL is the most used 3D format for sharing models and AM. https://admin.dasch.swiss/project/hp1UIqpKS_Kc7j0c5wh5jA/ontology/fagottino/DDD_data) (8 November 2023).

9 Stefan Verdegem and Ricardo Simian, "Adding a New Dimension to Woodwind Instrument Making, With a Little Help from Our (Tech) Friends", in: *Journal of the American Musical Instrument Society* 48 (2022), 300–306.

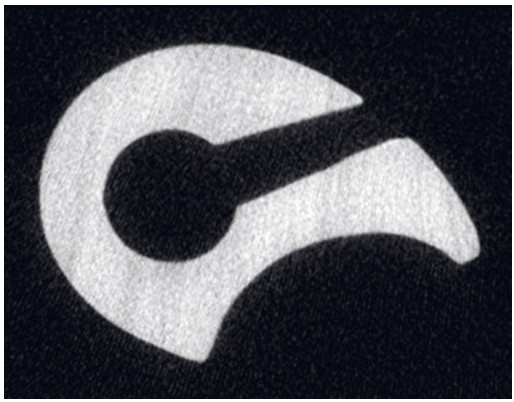

Fig. 2: Single slice of FT30 Scherer's wing section CT scan. The different grey shadings show different densities in the wood. Image by Ricardo Simian.

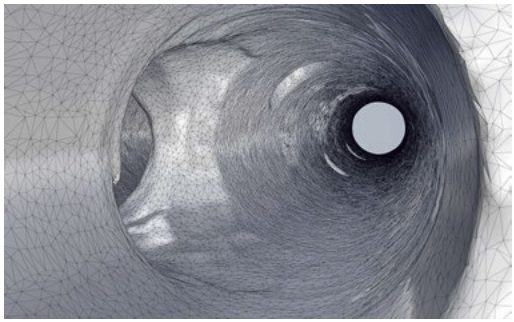

Fig. 3: Close-up of FT30 Scherer's U section STL file showing triangulation. Image by Ricardo Simian.

hand, irregular modifications or local corrections, such as removing a crack or making a specific edge sharper or smoother, can require huge amounts of work. CAD software keeps improving, but modifying STLs will likely remain a time-consuming endeavour, requiring the visual selection of hundreds or thousands of infinitesimal triangles and individually repositioning them.[10] Imagine, when using Photoshop, having to apply modifications pixel by pixel rather than with the smart tools which efficiently identify background and subject with a couple of clicks. The third 'D' in 3D comes at a high price in this case.

STLs are not the only 3D model format, however. Almost every CAD program operates with other formats when creating a 3D model, and only

10 CAD stands for "computer-aided design".

transforms the final product into STL to export it or send it to an AM machine. These other formats work, in simple terms, through geometry. For instance, if we want to make a 3D model of a sphere, we only need to define "sphere" and its radius to know the exact location of any point on its surface. Ironically, no matter how high the resolution of an STL, its many triangles will only approximate a sphere. We could create an STL with more bytes than the number of atoms in the universe, yet this would in fact only come extremely close to what we can geometrically define in perfection by saying "sphere with a radius of 2 cm." This applies to any curved surface, which basically means almost every real-world shape.

Geometrically defined 3D models are extremely efficient when it comes to quickly creating and modifying regular shapes. An experienced CAD user can make a 3D model of a chair or a house relatively quickly by defining the basic geometrical shapes which constitute it. Yet what would happen if, instead of drawing a regular object, we attempt to create a precise 3D model of something very irregular, a crushed piece of paper for example? Crafting a precise replica of an existing complex and irregular object can be a nightmare with even the best CAD software, and endless reference points will need to be taken from the original. In these cases only a 3D scan can succeed, but the delivered format will necessarily be a "many triangles" STL, not a geometrically defined model (Fig. 4).[11]

In practical terms, whenever producing a 3D model of an existing object, we must decide whether this is a regular object (like a house or a chair) that can be efficiently defined through geometry (resulting in a model which can easily be edited), or whether it is an intricately irregular object, which can only be 3D scanned (resulting in an STL which will be arduous to modify). The question then becomes whether or not musical instruments are regular or irregular objects. In theory, musical instruments are regular objects which follow well-defined geometries. As we have seen, the small irregularities are arguably something to treasure when attempting to make high-quality replicas,

11 There are even free apps available which, simply using a cell phone's camera, produce very decent 3D scans for small objects. Such tools would be useless for measuring musical instruments though, both because they cannot reach the inner bores and because of their low accuracy. For high quality scans, like the ones required for this research, CT technology or similar is needed.

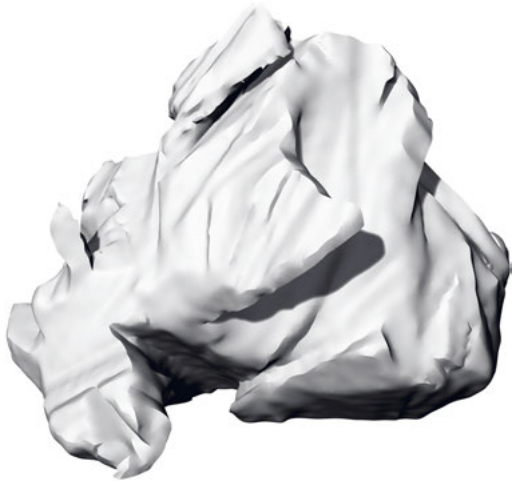

Fig. 4: 3D scan of a crushed piece of paper made with a cell phone. Image by Ricardo Simian.

rather than producing crude approximations which overlook small but relevant elements.

Since one of the objectives of the project was to craft twin copies of the originals, one ovalised and one re-rounded, working with the STLs straight from the CT scan was not an option. A richer, hybrid approach was needed instead. Depending on each instrument and its degree of deterioration or deformation, the exterior surface of the scan was left unaltered, while the inner bore was remodelled as a very complex geometrical shape. In some cases, a full reconstruction was required instead, painstakingly defining complex geometries from many reference points taken from the STLs. This process often led to dead ends, where the geometry became too complex to process and overwhelmed some of the best CAD software available. SubDs and other modelling options between STLs and geometrically-defined ones had to be used on some occasions to 'save the day' (Fig. 5)![12]

The final 3D models, no matter how complex it was to process them, delivered what was requested. The twin copies of each instrument were bent like the originals, and closely matched the inner bores, holes, and undercutting,

12 SubD stands for "subdivision modelling", a format in which surfaces are defined through non-flat and not necessarily triangular facets.

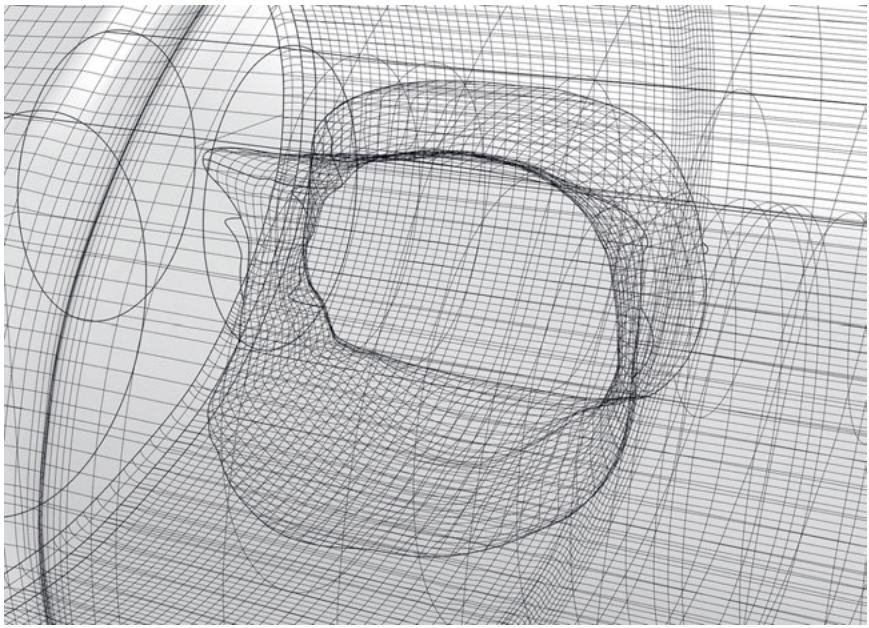

Fig. 5: Complex, irregular geometries inside FT30 Scherer's U section. Image by Ricardo Simian.

while at the same time restored tenons, sockets and other evidently damaged parts in a controlled manner.

Additive manufactured copies

AM replicas of musical instruments is a controversial subject, particularly when the originals are masterfully crafted museum objects. No matter how many (blind) tests are carried out, the subjective perception that natural materials and human craftsmanship are at the soul of what is being researched tends to prevail among musicians, undermining the validity of the endeavour.[13] The topic has been thoroughly discussed in several publications, how-

13 D. Murray Campbell, "Evaluating musical instruments", in: *Physics Today*, 67 (2014), 35–40.

ever, so we shall not indulge in it here.[14] Rather than arguing the case that AM can be a valid research tool in the field, we will present what was done, and how, within the parameters of this project. In any case, the project did not only focus on AM, but implemented a hybrid approach instead, making use of the best of both traditional and digital techniques, in a collaborative manner, in order to achieve optimal research results.

The body of the instruments, meaning the wooden parts, were produced through AM in SLS nylon.[15] This production system builds objects in layers, which creates an inner structure similar in many ways to wood. This fact, along with the specific density of the plastic polymer, delivers a result which is much closer than one would expect to the woods most used in woodwind instrument-making. SLS technology allows for complete freedom in terms of the shapes being created, which allows every hole, undercut and crack to be included in one go. Because it produces rough surfaces, finished parts were manually polished to make them smoother, and coated with an acrylic varnish for a better, waterproof finish.

There was some discussion on how to create keys for the instruments; good arguments were made for both exact AM replicas and for entirely manually-crafted ones. In the end, it was decided to create exact AM replicas from the CT scan data. Since CT technology was mainly developed for medical purposes, 3D scanning of metal parts was not among its original goals and remains quite a challenging endeavour.[16] Creating clean 3D models of the

14 Jamie Savan and Ricardo Simian, "CAD modelling and 3D printing for musical instrument research: the Renaissance cornett as a case study", in: *Early Music* 42 (2014), 537–544. Ricardo Simian, "3D-gedruckte Musikinstrumente", in: *Glareana* 65/1 (2016), 4–14. Eva Garus, "Zinken wie gedruckt", in: *Frankfurter Allgemeine Zeitung,* 5 December 2019, 21. Fiona Russell, "Printing the past: 3D printing for early music", in: *The Green Room* 6 (2019), 13–15. Stefan Verdegem and Ricardo Simian, "Adding a New Dimension to Woodwind Instrument Making, With a Little Help from Our (Tech) Friends", in: *Journal of the American Musical Instrument Society* 48 (2022), 300–306. Robert Howe et al., "Digital evaluation and replication of period wind instruments: the role of micro-computed tomography and additive manufacturing", in: *Early Music* 42 (2014), 529–536.

15 SLS stands for "selective laser sintering", an AM method in which a high precision laser melts powder in a layer-by-layer fashion.

16 Metals are tricky for most 3D scanning technologies. They cannot be taken inside magnetic resonance chambers if they have magnetic properties, as they reflect high energy

Fig. 6: AM copy of FT40 anonymous alongside the original. Photo: Ricardo Simian.

many required keys was quite a remarkable achievement by the scanning team. The final STLs produced in this manner were manufactured using SLS brass directly through AM, without any modification or in-between steps.[17] As expected, mounting the keys and getting them to work satisfactorily was a very difficult task, requiring extensive manual labour and drawing on the practical expertise of instrument maker Vincenzo Onida. It remains an open question whether, with currently available technology, AM actually saves time, money or work in relation to the traditional methods for a task like replicating these particular keys. Nevertheless, to test this in practice and to keep evaluating

beams in proton scans, and this creates disturbances of all kinds. For this project, wooden and metal parts were scanned separately.

17 In case the reader is wondering about AM metal: yes, AM is not only for plastics. At the current moment there are AM systems operating with all types of polymers, metals, glass, clay, sandstone, wax, cement, biomaterials, edible materials, wood, and more.

how these AM keys perform years after their assembly is an important experiment in and of itself, even if at times, a frustrating one (Fig. 6).

The twin copies of each instrument have been tested for a couple of years, and even used in concerts and recordings. No properly controlled blind tests have been conducted in order to conclude whether the ovalisation has a noticeable effect or not, but naturally every player wants to try it and usually develops a strong opinion after testing. Some anecdotal evidence has been gathered that reveals that players who were convinced that ovalised and rounded copies were entirely different could not tell them apart when something close to blind-testing conditions were applied, a situation that is much in line with what Campbell describes in his article "Evaluating musical instruments"[18], as well as with the previously mentioned studies by Fritz. This type of phenomenon is not limited to the music world, however, as smart blind test studies have shown that even professional sommeliers can be tricked into believing that they are drinking red wine by simply colouring a white one, amongst many similar research efforts.[19] Properly controlled and well-documented research is needed in this case, but the anecdotal evidence gathered so far strongly speaks to the ovalisation not producing a noticeable effect, or to it not being significant enough in the selected instruments to make a relevant difference.

Traditional copies

Rounding our circular research journey, instrument maker Vincenzo Onida created four instruments using traditional tools and materials, as well as corresponding bocals. One crucial element in making woodwind instruments concerns crafting the inner bores. Traditionally, this task is carried out with a lathe and exchangeable reamers. Traditional reamers are notoriously expensive and laborious to produce. They tend to be lifetime investments and are often passed on from one generation to the next, in an almost guild-like manner. Since the four chosen instruments are different in size and come from different old makers, it would have been impossible to find a single set of reamers which could have produced them all. The precision of the internal

18 Campbell, "Evaluating musical instruments" (see n. 13).

19 Gil Morrot, Frédéric Brochet, and Denis Dubourdieu, "The Color of Odors", in: *Brain Lang* 79 (2001), 309–320.

bores, as previously discussed, is a key element, if not *the* key element for woodwind instruments, yet crafting custom traditional reamers for all four instruments would have been a ludicrously expensive investment for a single experiment. The wise solution to this issue, chosen by Vincenzo Onida, was to produce laser-cut reamers, made from flat steel sheets, directly from the 3D data. This required some additional 3D modelling since the AM instruments were slightly bent instead of straight, but the results were both very precise and notably less expensive than all available traditional alternatives.

The digital involvement in the crafting of the traditional copies did not end with the reamers though. The AM copies were used as a reference throughout the entire building process, allowing the direct verification of drilling angles and details whenever necessary, as opposed to having to rely on handwritten measurements, diagrams, and notes, which, no matter how detailed, will never contain as much practical information as a 3D object does. Furthermore, working on "replaceable" AM copies allows for invasive measurements (which otherwise could damage an original instrument) and practical workshop handling in ways which we certainly do not allow ourselves when dealing with precious originals, for good reason.[20] Future craftspeople, or neo-crafters, will likely include more such possibilities and tools in their repertoire, even when aiming at producing something as traditional as an 18th century musical instrument.

Conclusions and future development

Historical musical instrument research is, almost by definition, a tradition-oriented endeavour. Despite this, technology has slowly made its way into this field, as the advantages of using some tools, when applied for research purposes, becomes apparent. The unprecedented precision and non-invasiveness of CT scans have made this technology not only a welcome guest but rather the gold standard when it comes to measuring museum instruments. Digital manufacturing, on the other hand, is being integrated in a slower manner, possibly because we are not only dealing with a measuring tool but with the end objects themselves. It is one thing to have technology helping backstage, but an entirely different one to bring digital reconstructions to the performance.

20 Verdegem and Simian, "Adding a New Dimension" (see n. 9).

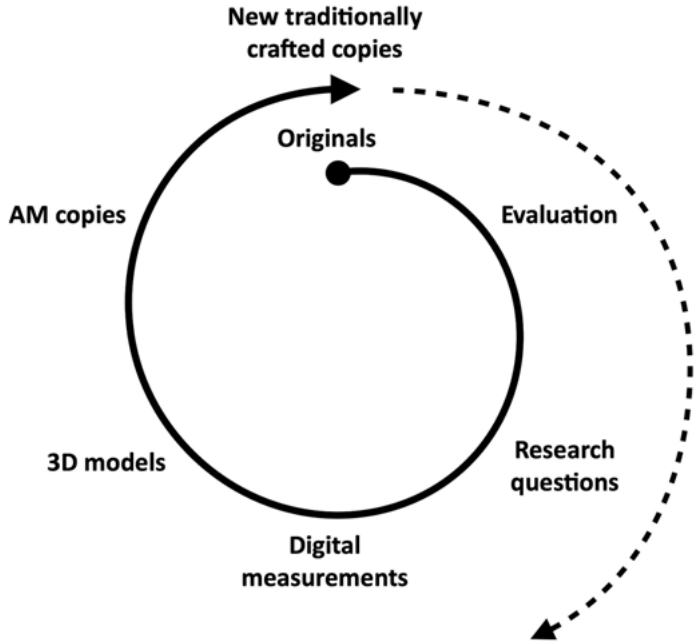

Fig. 7: Involvement of digital technologies in the research process. Diagram by Ricardo Simian.

Within this landscape, the "Fagottini and tenoroons" and "Out of the bass register" research projects stand out as a smart model for the integration of digital and traditional technologies at their best. The circular research journey, which started and ended with traditionally crafted instruments, did not make use of digitally-crafted copies as an alternative or replacement of tradition, but rather as a tool to dig deeper into aspects of the originals and their properties, as well as attempting to tackle long-standing questions which otherwise would be very difficult to address.

The research method (Fig. 7) began by evaluating historical originals and elaborating research questions, which were then addressed using a hybrid digital and traditional approach. Needless to say, the new traditionally-crafted copies delivered in the end will also be evaluated, leading to new research questions, opening the door to a new iteration of the cycle. Would it not be interesting to digitally measure the traditionally-crafted copies and to compare the resulting 3D models with the ones processed from the original instru-

ments? This could enlighten us regarding the results of modern vs old instrument-making tools to a degree which has not yet been tested. Based on that analysis, enhanced digital copies and new digitally-manufactured reamers and other aids could be produced, leading to a second iteration of the whole cycle. This could lead to an even deeper understanding of the complex relationships between musical instruments and their manufacturing tools, something which would hone and refine both our research and our crafting methods.

New Tools in the Making of Historical Woodwind Copies

Vincenzo Onida

A historical woodwind instrument maker is confronted with multiple, wide-ranging challenges. One of the most fundamental is to translate manual measurements of a historical instrument into a modern copy that closely corresponds to the technical and tonal characteristics of the original. The main problem is that measurements taken from the original only reflect part of the artefact. Secondly, changes in the wood due to long usage and/or storage must be interpreted, and thirdly, the tools of contemporary instrument makers are no longer the same as those of earlier makers. Certain features of the historical prototype cannot be reproduced for these reasons alone. Within the framework of the SNSF projects on small historical bassoons at the Schola Cantorum Basiliensis, I was given the rare opportunity to approach the construction of replica instruments with completely new prerequisites.

The most important technical innovation in my work to reconstruct small-sized bassoons was having 3D-printed reproductions of the historical originals available in my workshop. This meant that the spoon reamers (see below) could be replaced with ones constructed using new technical methods and could thus reproduce the historical bores much more precisely than had previously been the case. The 3D-printed reproductions of original instruments were therefore a fundamental contribution to practical study and to reconstructions in wood. Specific advantages were the possibility to:

- carry out acoustic experiments without restrictions due to wear and alteration of the originals;
- make direct morphological observations during reconstructions in wood;
- carry out experimental acoustic comparisons during and after reconstruction (e. g. exchange individual bassoon joints of 3D-printed and wooden copies).

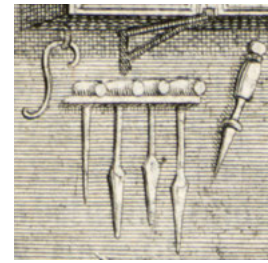

Fig. 1a: Christoph Weigel, Der Pfeiffenmacher (1698); **1b:** detail, reamers. Public Domain.

The flat reamers used were based on Ricardo Simian's computerised tomographic measurements, and were created by laser cutting, which allowed for better results than by using turned, conical reamers.[1] The cost was lower, as well as making the simplification of complex construction processes possible. Moreover, this led to a more accurate reproduction of details in the original instrument bore's conicity, which otherwise would have been simplified due to the technical limitations of conical reamers.

The bassoon is a woodwind instrument which, like the oboe (its close relative), is characterised by a conical bore. This irregular conicity was clearly evident in the historical instruments that were the subjects of our research. That kind of original bore cannot be reproduced in modern times, however. Early reamers used to drill the bore were iron rods forged in the shape of spoons, albeit with variations over the centuries. By using increas-

1 See Ricardo Simian's article in this volume.

ingly larger "spoon reamers", conical curvatures could be produced. A set of such spoon reamers can be seen in a historical engraving by Christoph Weigel (Fig. 1a/b).[2]

As a result of the differences in details of conical bores, each instrument has its own specific tonal character and tuning characteristics that create the real history of the bassoon, an instrument which has developed over the centuries according to regional traditions and expression by individual workshops. It is therefore evident that the measurements and accurate replication of this structural aspect of the bore trajectory is fundamental to the properties of each instrument. Measurements taken using both analogue and digital tools, and especially those obtained by computer tomography, produce data that, when converted into a diagram, show the highly irregular and complex tapering of the individual parts of the instrument. This variability, when studied in detail, is seemingly chaotic (Fig. 2).

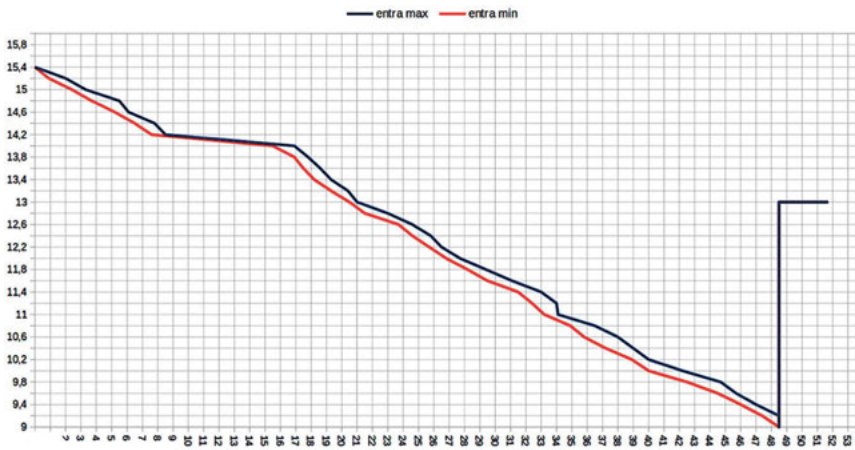

Fig. 2: Example of a step diagram of a bassoon by Rust, taken from manual measurement in steps of two-tenths of a millimetre (Dussolier wing joint 2020, private collection Italy). Diagram by author.

2 Christoph Weigel, *Abbildung der Gemein-Nützlichen Haupt-Stände*, Regensburg: Weigel 1698, engraving between p. 236/237; see: https://digital.slub-dresden.de/werkansicht/dlf/88/385 (28 July 2023).

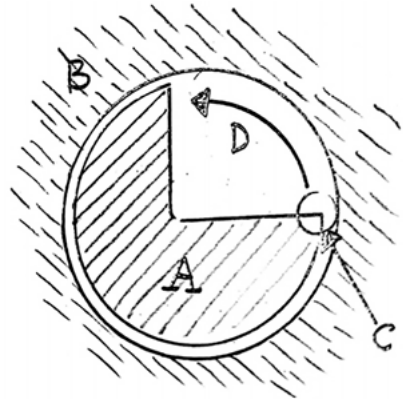

Fig. 3: Turned taper reamer. A: Reamer; B: Part of the wood; C: Cutting edge; D: Direction of rotation. Drawing by author.

The current method of making conical reamers, considered the common standard to date, is to turn the aforementioned steel rod on a lathe, and then mill a longitudinal notch into it (Fig. 3).

Longitudinal milling is not sufficient for cutting without the creation of a raised edge ("burr"), using the burnishing process (see below). The reamer creates an extremely smooth finish in the initial drilling, by producing a guide hole which is subsequently enlarged with cylindrical drills, whose size increases in increments of two millimetres, known as step-drilling or pre-boring; this is the first phase of creating the taper. The conical reamer is only used in the final step as it completes the first bore (Fig. 4).

Fig. 4: Turned tapered reamers from the Fontana company, Milan ca. 2007. Photo by author.

Technically, even the most modern numerically-controlled lathes require a certain degree of taper to be identified; if this taper varies, it is necessary to calculate each variation and therefore the relative length. Therefore, having observed that the shape of the taper profile of historical bassoons is always very complex, it is essential to identify the areas in which the profile continues approximately straight in the graph obtained from the measurements, and to identify where that profile line is broken. This simplifies as much as possible the profile of the reamer to be made.

The modern-day wood turner must make complex calculations for each variation of the bore in order to adjust the machine to the different degrees of inclination that the variation in the progression of the bore requires. This is a complicated task that requires further approximations, as well as determining a limit to the number of variations in conicity. Finally, this also requires a certain manual dexterity on the part of the operator. Due to the extreme complexity of the bore, multiple approximations of the original shape are unavoidable, along with the immense number of measurements required (Fig. 5).

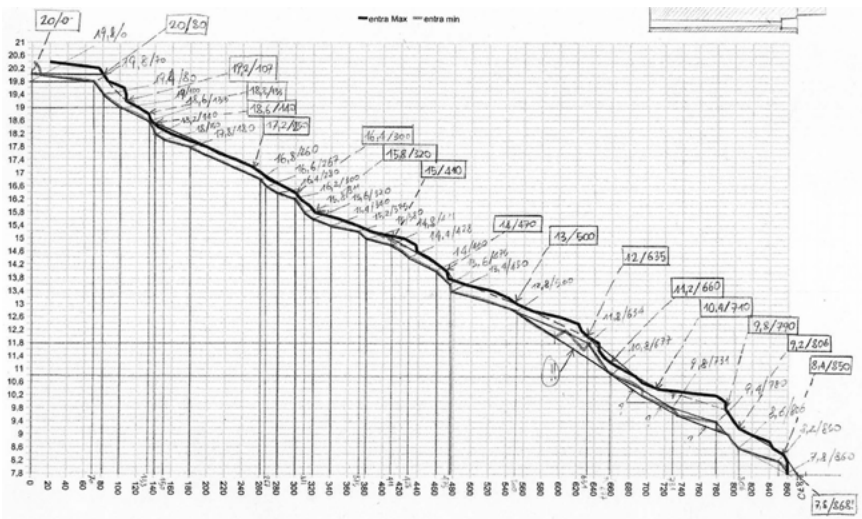

Fig. 5: Example of a simplified graph with the basic nodes of the taper of a bass dulcian. Diagram by author.

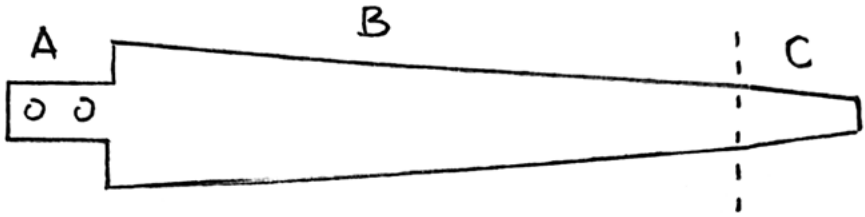

Fig. 6: A: Shank mount; B: Body; C: Intake. Drawing by author.

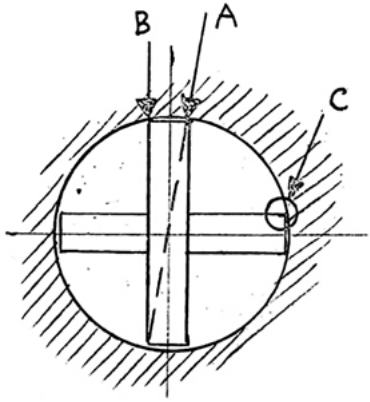

Fig. 7: Laser-cut reamer, A: Effective diameter; B: Reamer width; C: Contact edge. Drawing by author.

In our work replicating small bassoons we used flat reamers instead, the result of several years of research and experimentation. These reamers were made by cutting truncated cone-shaped trapezoids attached to cylindrical iron shanks. Two elements were cut and connected to the base element (Fig. 6, 8, 9), with an interlocking square forming a cross-sectional structure (Fig. 7). The final conical finish was obtained by rubbing the edges (Fig. 7C) of the appropriately prepared iron plate, using the burnishing method.

Burnishing is an old hand-working technique that consists of restoring hardness to metals that have become malleable and superficially soft after becoming hot through usage. With this technique even non-ferrous metals and alloys can achieve a considerable degree of hardness. The copper axe of the Similaun man, the so-called "Ötzi", found in the Alps in 1991 – dating from 3,330 BC – was able to cut, despite the natural softness of the material, thanks

Fig. 8: Set of laser-cut flat reamers. Photo by author.

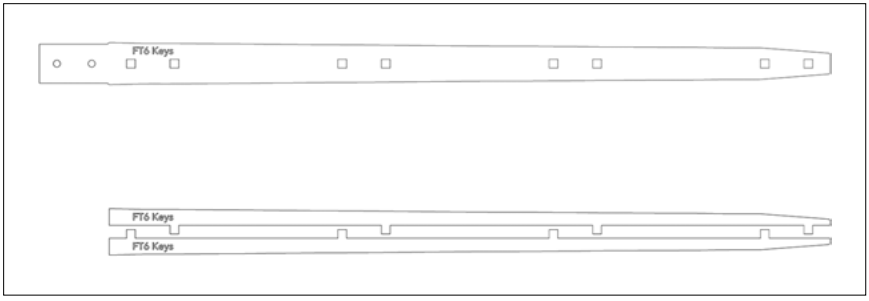

Fig. 9: Digital drawing from DWG format files of laser cutting reamers. Drawing by Ricardo Simian.

to similar processing.[3] Brass instruments, which are made from particularly thin metal sheets, are given remarkable rigidity using this technique, which is still successfully used by craftsmen such as the Egger company (Basel, Switzerland). I use it myself to stiffen the brass of bocals. Our flat reamers were laser cut from iron sheets (FE 360) by the Arnaboldi company in Cantù (CO), Italy. This is a material that, after the intense heating of the laser cut, has a certain

3 The mummy and the belongings of the Similaun man are preserved in the South Tyrol Museum of Archaelology in Bolzano, Italy. See: https://www.iceman.it/en/the-ice man/ (25 October 2023).

malleability, which allows for the correction of slight curvatures in the individual pieces. Surface hardening and the sharpening of edges can be achieved by burnishing with a very hard cobalt steel bar, and then enhanced by repeating the process. Moreover, this creates a very fine raised edge (the so-called "burr") which is the actual cutting edge of the reamer, allowing it to create extremely smooth surfaces if the burnishing is correctly executed. This technique is used on various traditional tools, including the spoon reamers, whose cutting capacity is established precisely by this burr, skilfully executed by the work of the carbide grinder each time it is used.

The same principle enables the use of scrapers, used in fine cabinetmaking (marquèterie) and in lutherie, where they are used for shaping the soundboard of stringed instruments. The scraper is a steel plate, the edge of which is burnished, used on wooden surfaces to obtain extremely smooth finishes. A wide variety of tools, such as spoon-shaped reamers, function thanks to this technique, used to sharpen their edges after each use. Traditionally, the flat reamer is considered a cruder tool, as it can cause flaws in the rotation by cutting small notches deeper and deeper into the wooden surface being machined. We overcame this issue by constructing the reamer not only with a single flat section but also with two perpendicular elements, thus obtaining a cross-shaped section (Fig. 7) which then created eight points of contact between reamer and wood instead of four (Fig. 7C). This led to better stability and good centring of the tool.

As a result, an innovation has been introduced to this previously 'low-tech' tool through laser cutting, which allows for high precision and accuracy; indeed, its edge is no longer a mere approximation of the original but the exact replica of it, which gives it the ability to exactly reproduce all the details of the computerized tomography data. The digital drawings, necessary to transform the measurements into commands to the laser cutting machine, were processed by Ricardo Simian based on tomographic information. The measurements of the diameters (Fig. 7A, 7B) were translated into the actual width of the iron plates of the reamers (Fig. 9).

In this way, our flat reamers became tools of incomparable precision and detail in the replication of the original taper, unlike the approximations of turned reamers.

Another attractive aspect of the laser cutting of our iron plates (all made in five-millimetre thickness) is that it is very cost-effective compared to the

turning of conical reamers. These still often require manual assistance despite the use of CNC lathes, especially in their thinner aspects, due to the vibration caused by the elasticity of the materials. Moreover, flat reamers are subjected to less undesirable heating during the drilling process, as compared to conical reamers. The latter are often prone to overheating due to a wider contact area, and require intermittent cooling to prevent the wood from burning or its fibres to be stressed, which can in turn lead to resin leak, resulting in further temperature rise. Conversely, the flat reamer, made with a cross-section, has a minimal contact surface and its structure thus favours heat dissipation. If handled well, the heating is minimal and little is transmitted to the wood.

Final observations

This experimental method has a potential flaw in the possible deformation of relatively soft materials if subjected to too much work; this can be avoided with slow-feed machining and low rotational speeds. Another potential problem is that of wear decreasing the tool's dimensions. This issue has already been dealt with by Bergeron in his *Manuel du tourneur* (1796),[4] and can easily be overcome by inserting the reamer further into the wood while drilling. Furthermore, a flat reamer's deformations can be corrected, while a deformed conical reamer is practically useless. It should be kept in mind, however, that this was research work and, as only a small series of pieces were produced, the wear and tear of tools was non-existent. Given the low implementation costs, one can replace worn tools at very modest cost, as the major expense is in the processing of the data rather than in the material and its cutting.

Research into small bassoons has made use of computer tomographic technology both for measuring existing instruments and for producing 3D prints. The availability of these high-precision, three-dimensional reproductions, which can be manipulated, observed, re-measured, played, and tested with the tools in the workshop, constitutes a significant added value in obtaining faithful copies, rather than 'reinterpreted' ones, as easily happens in the

4 Louis-Eloy Bergeron [pseud. Louis-George-Issac Salivet], *Manuel du Tourneur*, Seconde Édition, Tome Second, Paris: 1816, Chap. II, Sect. II "Flûtes et Flageolet", 44. See the digitized copy of the Getty library: https://archive.org/details/manueldutourneur02berg_0/page/44/mode/1up (25 October 2023).

world of historical instrument making. The bassoon is an instrument whose morphology is difficult to exhaustively describe solely with the measurement of diameters, as is the case with oboes, but requires a technical description that is complex and often inadequate at the time of realisation in the workshop. Wing joint overhang with both concave and convex shapes, for instance, cannot be produced only by turning. Another example is the complex intersection of straight planes and curved boot planes in the long joint of bassoons made in the Austrian tradition. With the new tools, I was able to recreate important and often overlooked details of the external flaring of the tone holes with precision drills, and to carve their edges with a scalpel. The availability of the three-dimensional object through 3D printing is an advantage that is unsurpassed in constructing handcrafted one-off pieces. The eventual application of numerically- controlled CNC machining (such as three-axis CNC) is however unsustainably expensive at the present time, unless serial production is planned.

The interaction between experienced craftsmanship, traditional processing techniques in wood, computer tomographic measurements and 3D printing of historical instruments, as well as the creation of specific laser-cut tools (reamers) for the bore, has led to fundamentally new techniques in the production of copies of historical models of, in this case, small bassoons. The result is a significant enrichment and technical advancement in the construction of historical woodwind instruments and holds great potential in its future application.

Instrument Catalogue

Instrument Catalogue of Small-Sized Bassoons, ca. 1700–ca. 1915

Donna Agrell, Áurea Domínguez, Giovanni Battista Graziadio

The catalogue of small bassoons presented here constitutes the core of the research about these instruments. It represents all the evidence gathered by the Schola Cantorum Basiliensis research team in the years 2017 to 2023 regarding surviving fagottini and tenoroons from ca. 1700 to 1915.[1]

About half of the preserved instruments were examined and measured *in situ* by members of the team. Initially, only these instruments were given FT-numbers (FT = Fagottino/Tenoroon), up to FT61. The order of the numbers is random, depending on the initial information received; these instruments are marked "examined" in the catalogue. Detailed datasets of examined instruments can be found online (see below). Instruments from unknown makers are noted as "Anonymous", with consecutive numbering (Anonymous 1, Anonymous 2, etc.).

During the preparation of this publication, it was decided to assign an FT number to all other instruments in order to make them clearly identifiable in future research and publications. Additionally, there are a few instruments and records that either fall outside the time frame or do not meet the design criteria of the objects studied. These are listed with "M" numbers (for "miscellaneous"). A total of 136 instruments, made over a period of about 200 years, have been documented.

For reasons of clarity, bibliographic references are abbreviated in the catalogue entries, where it was also considered useful to include brief notes about some instruments. A list of complete references can be found in Section III.

In addition to the catalogue, an alphabetical list of makers is given so that small bassoons by a particular maker can be identified quickly. Further information can be found in the main catalogue via the FT number.

1 Status of the catalogue: October 2024.

Detailed datasets (dimensions, comments, photos, videos) of the instruments marked "examined" (FT1–FT61, M2, M3) are available online and publicly accessible in two digital repositories; only the permalinks for the "Zenodo" platform are provided in the catalogue entries. Identical datasets about individual instruments, and the full documentation of the research project, can be found at the repository DaSCH: https://www.dasch.swiss/project/fagottini-and-tenoroons%3A-small-sized-bassoons-from-the-18th-and-19th-centuries.

In the digital version of this publication, the links are active and lead directly to the corresponding websites.

I. Main Catalogue (ordered by ID-numbers)

FT1

Maker:	ADLER, Frédéric G.
Instrument:	11-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1835
Location:	Boston / MA (US), Boston Symphony Orchestra Collection (Casadesus collection), Casadesus Collection #65
Reference / Notes:	De Wolfe Howe, Casadesus (1931), 263 Jansen, The Bassoon (1978), Vol. 1, 328 Waterhouse, New Langwill (1993), 3
Online:	http://doi.org/10.5281/zenodo.2647780

FT2

Maker:	ADLER, Frédéric G.
Instrument:	13-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1840
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.2463
Reference / Notes:	Gétreau, Aux origines (1996), 713 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3237813

FT3

Maker:	ANONYMOUS 1
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	[Unknown], ca. 1820–1850
Location:	Italy, private collection
Online:	http://doi.org/10.5281/zenodo.2647807

FT4

Maker:	ANONYMOUS 4
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	[Germany], ca. 1780
Location:	Amsterdam (NL), private collection
Online:	https://doi.org/10.5281/zenodo.7837280

FT5

Maker:	SCHUBERT**,** Louis-Paul (formerly listed as "Anonymous 6")
Instrument:	13-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1860
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.971.7.2
Reference / Notes:	Gétreau, Aux origines (1996), 722 Domínguez, Fagottini (2019), 6–19
Online:	https://doi.org/10.5281/zenodo.2648160

FT6

Maker:	ANONYMOUS 7
Instrument:	8-key tenoroon / G; examined
Provenance / Date:	[Vienna / Naples], ca. 1815
Location:	Switzerland, private collection
Reference / Notes:	Viennese key system; was recovered in Italy
Online:	http://doi.org/10.5281/zenodo.3526420

FT7

Maker:	ANONYMOUS 8
Instrument:	3-key fagottino / octave; examined
Provenance / Date:	[Germany], ca. 1730–1770
Location:	Stockholm (SE), Scenkonstmuseet
Online:	https://doi.org/10.5281/zenodo.3269294

FT8

Maker:	ASTOR, Georg & HORWOOD
Instrument:	6-key tenoroon / [F?]; examined
Provenance / Date:	London, ca. 1815
Location:	Greenville / SC (US), Sigal Music Museum 1995.28
Reference / Notes:	Rice, Four Centuries (2015),173
Online:	http://doi.org/10.5281/zenodo.3269188

FT9

Maker:	BLOCKLEY, John
Instrument:	4-key tenoroon / G; examined
Provenance / Date:	Ullesthorpe / Leicestershire (UK), ca. 1780
Location:	Boston / MA (US), Museum of Fine Arts, 17.1923
Reference / Notes:	Bessaraboff, Musical instruments (1941),132
	Jansen, The Bassoon (1978), Vol. 1, 339
	Waterhouse, New Langwill (1993), 35
Online:	http://doi.org/10.5281/zenodo.2648178

FT10

Maker:	BONACCORSI
Instrument:	7-key fagottino / octave; examined
Provenance / Date:	Barga (IT), ca. 1815
Location:	Stockholm (SE), Nydahl Collection ITBO86
Reference / Notes:	Waterhouse, New Langwill (1993), 39
Online:	http://doi.org/10.5281/zenodo.3269329

FT11

Maker:	CAHUSAC, Thomas 1
Instrument:	6-key tenoroon / [G?]; examined
Provenance / Date:	London, 1789
Location:	Brussels (BE), Musée des Instruments de Musique 996
Reference / Notes:	Mahillon, Catalogue Bruxelles (1893 / 1978), Vol. II, 268
	Waterhouse, New Langwill (1993), 55
	Young, 4900 Instruments (1993), 45
Online:	http://doi.org/10.5281/zenodo.3269319

FT12

Maker:	CASTLAS
Instrument:	7-key fagottino / octave; examined
Provenance / Date:	Turin, ca. 1800
Location:	Paris (FR), Bruno Kampmann collection BK 44
Reference / Notes:	Kampmann (1986), 53
Online:	http://doi.org/10.5281/zenodo.3269411

FT13

Maker:	DELUSSE, Christophe
Instrument:	7-key fagottino / octave; examined
Provenance / Date:	Paris, ca. 1783
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.255 C.499
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 354 Waterhouse, New Langwill (1993), 85 Young, 4900 Instruments (1993), 55 Gétreau, Aux origines (1996), 650 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3270809

FT14

Maker:	DENNER, Johann C.
Instrument:	3-key fagottino / octave; examined
Provenance / Date:	Nuremberg, ca. 1700
Location:	Boston / MA (US), Museum of Fine Arts 17.1922
Reference / Notes:	Bessaraboff, Musical instruments (1941), 132 Waterhouse, New Langwill (1993), 85 Kuronen, Musical Instruments (2013), 66
Online:	http://doi.org/10.5281/zenodo.3246244

FT15

Maker:	GRENSER, Heinrich & WIESNER, Samuel
Instrument:	6-key fagottino / octave; examined
Provenance / Date:	Dresden, ca. 1824
Location:	Stockholm (SE), Scenkonstmuseet M3331
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 383 Waterhouse, New Langwill (1993), 146 Young, 4900 Instruments (1993), 108
Online:	https://doi.org/10.5281/zenodo.3269762

FT16

Maker:	GRENSER, Heinrich
Instrument:	5-key fagottino / octave; examined by 3rd parties
Provenance / Date:	Dresden, ca. 1800
Location:	The Hague (NL), Gemeentemuseum Ea.402.1933
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 383
	Young, 4900 Instruments (1993), 105
Online:	https://doi.org/10.5281/zenodo.7699966

FT17

Maker:	JACOBY Fils
Instrument:	5-key fagottino / octave; examined
Provenance / Date:	Auch, ca. 1785
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.2479
Reference / Notes:	Waterhouse, New Langwill (1993), 191
	Gétreau, Aux origines (1996), 713
	Domínguez, Fagottini (2019), 6–19
Online:	https://doi.org/10.5281/zenodo.3267140

FT18

Maker:	KRAUS, I.
Instrument:	4-key tenoroon / G; examined
Provenance / Date:	Germany, ca. 1775
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.750
Reference / Notes:	Waterhouse, New Langwill (1993), 215
	Gétreau, Aux origines (1996), 667
	Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3266438

FT19

Maker:	MERKLEIN, I.
Instrument:	8-key tenoroon / F; examined
Provenance / Date:	Vienna, ca. 1835
Location:	Vicenza (IT), private collection
Online:	http://doi.org/10.5281/zenodo.3280189

FT20

Maker:	MÜLLER
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	Germany, ca. 1770
Location:	Brussels (BE), Musée des Instruments de Musique 992
Reference / Notes:	Mahillon, Catalogue Bruxelles (1893 / 1978), Vol. 2, 265 Jansen, The Bassoon (1978), Vol. 1, 447 Waterhouse, New Langwill (1993), 274
Online:	http://doi.org/10.5281/zenodo.3293927

FT21

Maker:	PORTHAUX, Dominique A.
Instrument:	9-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1808
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.971.7.1
Reference / Notes:	Gétreau, Aux origines (1996), 722 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3267389

FT22

Maker:	PROFF, François X.
Instrument:	5-key tenoroon / G; examined
Provenance / Date:	Tours, ca. 1800
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.2190
Reference / Notes:	Waterhouse, New Langwill (1993), 311 Gétreau, Aux origines (1996), 707 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3336607

FT23

Maker:	ROTTENBURGH, Godfrius A.
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	Brussels, ca. 1760
Location:	Greenville / SC (US), Sigal Music Museum 1983.13
Reference / Notes:	Young, 4900 Instruments (1993), 192 Rice, Four Centuries (2015), 171
Online:	http://doi.org/10.5281/zenodo.3267160

FT24

Maker:	SAVARY PERE
Instrument:	5-key tenoroon / G; examined
Provenance / Date:	Paris, ca. 1810
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.2189
Reference / Notes:	Gétreau, Aux origines (1996), 707 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3270534

FT25

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	13-key fagottino / F; examined
Provenance / Date:	Paris, 1827
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.646 C.500
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 472 Young, 4900 Instruments (1993), 199 Gétreau, Aux origines (1996), 709 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3241877

FT26

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	12-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1838
Location:	Europe, private collection
Online:	https://doi.org/10.5281/zenodo.7699743

FT27

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	16-key tenoroon / F; examined
Provenance / Date:	Paris, 1841
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.2329
Reference / Notes:	Young, 4900 Instruments (1993), 199 Gétreau, Aux origines (1996), 709 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3301458

FT28

Maker:	SCHERER, Johannes & Georg H.
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	Butzbach, ca. 1760
Location:	Paris (FR), Le Musée de la musique de la Philharmonie de Paris E.186 C.498
Reference / Notes:	Young, 4900 Instruments (1993), 210 Gétreau, Aux origines (1996), 664 Domínguez, Fagottini (2019), 6–19
Online:	http://doi.org/10.5281/zenodo.3276353

FT29

Maker:	SCHERER, Johannes & Georg H.
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	Butzbach, ca. 1764
Location:	Brussels (BE), Musée des Instruments de Musique 426
Reference / Notes:	Mahillon, Catalogue Bruxelles (1893 / 1978), Vol. 1, 436–437 Jansen, The Bassoon (1978), Vol. 1, 478 Young, 4900 Instruments (1993), 210
Online:	http://doi.org/10.5281/zenodo.3241603

FT30

Maker:	SCHERER, Johannes & Georg H.
Instrument:	5-key fagottino / octave; examined
Provenance / Date:	Butzbach, ca. 1760–1778
Location:	Zurich (CH), Museum für Gestaltung 1963-60.102
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 478 Waterhouse, New Langwill (1993), 353 Young, 4900 Instruments (1993), 210 Formerly in Museum Bellerive Zurich
Online:	http://doi.org/10.5281/zenodo.3241608

FT31

Maker:	TAUBER, Kaspar
Instrument:	6-key tenoroon / [G?]; examined
Provenance / Date:	Vienna, ca. 1815
Location:	Greenville / SC (US), Sigal Music Museum 2007.15
Reference / Notes:	Rice, Four Centuries (2015), 173
Online:	http://doi.org/10.5281/zenodo.2652907

FT32

Maker:	TÖLCKE, Heinrich Carl
Instrument:	4-key fagottino / octave
Provenance / Date:	Braunschweig, ca. 1780
Location:	Meiningen (DE), Musiksammlung M62
Reference / Notes:	Waterhouse, New Langwill (1993), 401
	Goltz, Meininger Museen (2012), 194–197

FT33

Maker:	TUERLINCKX, Jean A.
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	Mechelen (Belgium), ca. 1795
Location:	Brussels (BE), Musée des Instruments de Musique 185
Reference / Notes:	Mahillon, Catalogue Bruxelles (1893 / 1978), Vol. 1. 238
	Jansen, The Bassoon (1978), Vol. 1, 511
	Young, 4900 Instruments (1993), 246
Online:	http://doi.org/10.5281/zenodo.2639507

FT34

Maker:	TUERLINCKX, Jean A.
Instrument:	5-key tenoroon / F; examined
Provenance / Date:	Mechelen (BE), ca. 1820
Location:	Brussels (BE), Musée des Instruments de Musique 184
Reference / Notes:	Mahillon, Catalogue Bruxelles (1893 / 1978), Vol. 1, 238
	Young, 4900 Instruments (1993), 246
Online:	http://doi.org/10.5281/zenodo.3311608

FT35

Maker:	DUPRÉ, Joseph
Instrument:	0-key unfinished fagottino; examined
Provenance / Date:	Tournai (Belgium), ca. 1820–1850
Location:	Brussels (BE), Musée des Instruments de Musique 2627 / JR0060
Reference / Notes:	Mahillon, Catalogue Bruxelles (1893 / 1978), Vol. 4, 363
	Jansen, The Bassoon (1978), Vol. 1, 362
Online:	http://doi.org/10.5281/zenodo.2648191

FT36

Maker:	GAUTROT Aîné
Instrument:	16-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1845–84
Location:	UK, Waterhouse collection 63.3
Reference / Notes:	Kopp, The Bassoon (2012), 226
Online:	http://doi.org/10.5281/zenodo.3311979

FT37

Maker:	MARZOLI, A. G. Philippe / Tribert Marzoli Boehm (TMB)
Instrument:	15-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1860
Location:	UK, Waterhouse collection 58.2
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 437
	Waterhouse, Proud Bassoon (1983), Cat. entry 33.
	Young, 4900 Instruments (1993), 153
Online:	http://doi.org/10.5281/zenodo.3329023

FT38

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	12-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1842
Location:	UK, Waterhouse collection 79.3
Reference / Notes:	Waterhouse, Proud Bassoon (1983), Cat. entry 32
	Young, Loan Exhibition (1988), Cat. entry 74
	Young, 4900 Instruments (1993), 246
Online:	http://doi.org/10.5281/zenodo.3241731

FT39

Maker:	SCHERER, Johannes & Georg H.
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	Butzbach, ca. 1750–1778
Location:	UK, Waterhouse collection 7.3
Reference / Notes:	Made for Music (1986), Cat. entry 81
	Young, 4900 Instruments (1993), 210
	Formerly in Galpin Society Collection
Online:	http://doi.org/10.5281/zenodo.3294589

FT40

Maker:	ANONYMOUS 11
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	[Unknown], ca. 1750–90
Location:	Switzerland, private collection
Online:	https://doi.org/10.5281/zenodo.3831175

FT41

Maker:	HIRSBRUNNER (Gebrüder)
Instrument:	12-key tenoroon / F; examined
Provenance / Date:	Sumiswald (CH), ca. 1830
Location:	Berne (CH), Klingende Sammlung 1919
Reference / Notes:	von Steiger, Hirsbrunner (2016), 196 Former Hirsbrunner family collection
Online:	http://doi.org/10.5281/zenodo.3294454

FT42

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	11-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1840
Location:	Switzerland, private collection
Online:	https://doi.org/10.5281/zenodo.3831175

FT43

Maker:	LEIBERZ, Johann Peter
Instrument:	7-key fagottino / octave; examined
Provenance / Date:	Koblenz, ca. 1825–1835
Location:	Leipzig (DE), Museum für Musikinstrumente der Universität Leipzig 1362
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1; 429, Vol. 5: Plate 15, Fig. 40 Heyde, Rohrblattinstrumente Leipzig (1979), 412–414 Heyde, Über Rohrblattinstrumente (1979), 383 Waterhouse, New Langwill (1993), 231
Online:	http://doi.org/10.5281/zenodo.3246266

FT44

Maker:	SCHERER, Johannes & Georg H.
Instrument:	4-key fagottino / octave; examined
Provenance / Date:	Butzbach, ca. 1760–1770
Location:	Leipzig (DE), Museum für Musikinstrumente der Universität Leipzig 1548
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 478 Young, Loan Exhibition (1988), Cat. entry 54 Heyde, Rohrblattinstrumente Leipzig (1979), 414–415 Young, 4900 Instruments (1993), 210
Online:	http://doi.org/10.5281/zenodo.3246272

FT45

Maker:	STEHLE, Johann
Instrument:	12-key tenoroon / F; examined
Provenance / Date:	Vienna, ca. 1850–1860
Location:	Leipzig (DE), Museum für Musikinstrumente der Universität Leipzig 1365
Reference / Notes:	Heyde, Rohrblattinstrumente Leipzig (1979), 418–419 Waterhouse, New Langwill (1993), 384
Online:	http://doi.org/10.5281/zenodo.3246282

FT46

Maker:	ANONYMOUS 12
Instrument:	5-key tenoroon / G; examined
Provenance / Date:	[Germany], ca. 1815
Location:	Leipzig (DE), Museum für Musikinstrumente der Universität Leipzig 1363
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 5, Plate 15, Fig. 39 Heyde, Rohrblattinstrumente Leipzig (1979), 415–416 Kinsky, Heyer (ca. 1914), 175–176
Online:	http://doi.org/10.5281/zenodo.3311760

FT47

Maker:	RIVA, Giacinto
Instrument:	13-key tenoroon / F; examined
Provenance / Date:	Ferrara, ca. 1860–1870
Location:	Leipzig (DE), Museum für Musikinstrumente der Universität Leipzig 1364
Reference / Notes:	Waterhouse, New Langwill (1993), 330
Online:	http://doi.org/10.5281/zenodo.3246324

FT48

Maker:	TAUBER, Kaspar
Instrument:	9-key tenoroon; examined
Provenance / Date:	Vienna, ca. 1820–1829
Location:	Trieste (IT), Civico Museo Teatrale Carlo Schmidl 991
Online:	https://doi.org/10.5281/zenodo.7699642

FT49

Maker:	KÜSS, Wolfgang
Instrument:	10-key tenoroon; examined
Provenance / Date:	Vienna, ca. 1810–1839
Location:	Italy, private collection
Reference / Notes:	Jansen, The Bassoon (1978) Vol. 3, 422 Young, 4900 Instruments (1993), 142
Online:	https://doi.org/10.5281/zenodo.4460187

FT50

Maker:	GRENSER, Heinrich
Instrument:	6-key fagottino / octave; examined
Provenance / Date:	Dresden, ca. 1806–1813
Location:	Berlin (DE), Musikinstrumenten Museum. Staatliches Institut für Musikforschung 2973
Reference / Notes:	Otto, MIM Berlin (1965), 69 Young, 4900 Instruments (1993), 105
Online:	https://doi.org/10.5281/zenodo.4308926

FT51

Maker:	ANONYMOUS 3
Instrument:	10-key tenoroon / F; examined
Provenance / Date:	[United Kingdom], ca. 1830
Location:	London (UK), Horniman Museum 2004.1044
Online:	https://doi.org/10.5281/zenodo.7698459

FT52

Maker:	ANONYMOUS 9
Instrument:	6-key fagottino / octave; examined
Provenance / Date:	[United Kingdom], ca. 1800–1825
Location:	London (UK), Horniman Museum 14.5.47 / 278
Online:	https://doi.org/10.5281/zenodo.769848

FT53

Maker:	PACE, Charles
Instrument:	9-key tenoroon / F; examined
Provenance / Date:	London, ca. 1825
Location:	London (UK), Horniman Museum 2004.1068
Online:	https://doi.org/10.5281/zenodo.7698504

FT54

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	14-key tenoroom / F; examined
Provenance / Date:	Paris, ca. 1845–1850
Location:	London (UK), Horniman Museum 1976.224
Online:	https://doi.org/10.5281/zenodo.7698522

FT55

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	10-key tenoroon / F; examined
Provenance / Date:	Paris, 1835
Location:	London (UK), Royal College of Music Museum RCM 0998
Online:	https://doi.org/10.5281/zenodo.7698547

FT56

Maker:	BÜHNER & KELLER
Instrument:	7-key fagottino / octave; examined
Provenance / Date:	Strasbourg, ca. 1810
Location:	London (UK), Royal College of Music Museum RCM 0089
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 346
	Ridley, The Royal College (1982), 28
	Young, 4900 Instruments (1993), 41
Online:	https://doi.org/10.5281/zenodo.7698923

FT57

Maker:	MILHOUSE, William
Instrument:	4-key tenoroon / [G?]; examined
Provenance / Date:	London, ca. 1800
Location:	London (UK), Royal College of Music Museum RCM 0442
Reference / Notes:	Ridley, The Royal College (1982), 18–19
Online:	https://doi.org/10.5281/zenodo.7698937

FT58

Maker:	SAXTON, Thomas
Instrument:	4-key tenoroon / G; examined
Provenance / Date:	Nottingham, 1793–1799
Location:	London (UK), Royal College of Music Museum RCM0225
Reference / Notes:	Ridley, The Royal College (1982), 28
Online:	https://doi.org/10.5281/zenodo.7698967

FT59

Maker:	KUTERUF, J.
Instrument:	3-key fagottino / octave; examined
Provenance / Date:	Germany, ca. 1700–1760
Location:	Munich (DE), Deutsches Museum 21641
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 422
	Seifers, Blasinstrumente München (1980), 69
	Waterhouse, New Langwill (1993), 219
Online:	https://doi.org/10.5281/zenodo.7698983

FT60

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	11-key tenoroon / G; examined
Provenance / Date:	Paris, 1824
Location:	Switzerland, private collection
Reference / Notes:	Formerly in the Richard W. and Jeannine E. Abel Musical Instrument Collection; acquired from Tony Bingham, London, 1996.
Online:	https://doi.org/10.5281/zenodo.7782327

FT61

Maker:	ADLER, Frédéric G.
Instrument:	11-key tenoroon / F; examined
Provenance / Date:	Paris, ca. 1840
Location:	Switzerland, private collection
Reference / Notes:	Formerly in the Richard W. and Jeannine E. Abel Musical Instrument Collection; acquired from Tony Bingham, London, 1996
Online:	https://doi.org/10.5281/zenodo.7831952

FT62

Maker:	ANONYMOUS 2
Instrument:	x-key tenoroon / F
Provenance / Date:	[Unknown], ca. 1830
Location:	Nice (FR), Museé du Palais Lascaris C.152
Online:	http://basenationale.philharmoniedeparis.fr/doc/BASENATIONALE/0875954/basson-quinte-tenoron-en-sol

FT63

Maker:	ANONYMOUS 5
Instrument:	6-key fagottino / octave
Provenance / Date:	[United Kingdom], ca. 1800
Location:	Formerly in Henk de Wit collection
Reference / Notes:	Langeveld, Tentoonstelling (1992), #39

FT64

Maker:	ANONYMOUS 10
Instrument:	7-key fagottino / octave
Provenance / Date:	[France], ca. 1850–1898
Location:	Madrid (ES), Patrimonio Nacional, Palacio Real
Reference / Notes:	Bordas, Instrumentos musicales (2008), Vol. II, 66

FT65

Maker:	ANONYMOUS 13
Instrument:	3-key fagottino / octave
Provenance / Date:	[France], ca. 1700–1780
Location:	New York (US), Metropolitan Museum of Art 89.4.2037
Reference / Notes:	Crosby Brown, Collection (1904), Vol. I, 149, ill.
Online:	https://www.metmuseum.org/art/collection/search/502615

FT66

Maker:	ANONYMOUS 14
Instrument:	10-key tenoroon / F
Provenance / Date:	[United Kingdom], ca. 1820
Location:	New York (US), Metropolitan Museum of Art 89.4.2202
Reference / Notes:	Crosby Brown, Collection (1904), Vol. I, 149, ill.
Online:	https://www.metmuseum.org/art/collection/search/503867

FT67

Maker:	ANONYMOUS 15
Instrument:	6-key tenoroon / [G?]
Provenance / Date:	[United Kingdom], ca. 1800
Location:	Tucson / AZ, (US), private collection

FT68

Maker:	ANONYMOUS 16
Instrument:	14-key tenoroon / [F?]
Provenance / Date:	[Germany], ca. 1825–1850
Location:	Stuttgart (DE), private collection
Reference / Notes:	See similarities to FT41

FT69

Maker:	ANONYMOUS 17
Instrument:	6-key tenoroon / [G?]
Provenance / Date:	[United Kingdom], ca. 1800
Location:	British Columbia (CA), Instrument dealer
Online:	http://www.music-treasures.com/antwood.htm

FT70

Maker:	ANONYMOUS 18
Instrument:	0-key unfinished fagottino
Provenance / Date:	[Unknown], ca. 1820
Location:	Linz (AT), Oberösterreichisches Landesmuseum Formerly Kremsmünster (AT), Musikinstrumenten-Museum Schloss Kremsegg, 84-7-54 Formerly in Streitwieser Foundation, Pottstown / PA (US), (Ex-Sarah Frishmuth Collection)
Reference / Notes:	Examined in April 2019 by Michael Söllner

FT71

Maker:	ANONYMOUS 19
Instrument:	13-key tenoroon / G
Provenance / Date:	[France], 1860–1870
Location:	France, collection of Thibouville / Cambouville (THI / CAM)

FT72

Maker:	BABB, G.
Instrument:	6-key tenoroon / [G?]
Provenance / Date:	London, ca. 1780
Location:	Oxford (UK), Bate Collection of Musical Instruments x34
Reference / Notes:	Baines, The Bate Collection (1976), 29 Jansen, The Bassoon (1978), Vol. 1, 332 Waterhouse, New Langwill (1993), 14
Online:	http://minim.ac.uk/index.php/explore/?instrument=3921

FT73

Maker:	BLOCKLEY, John
Instrument:	6-key tenoroon / [G?]
Provenance / Date:	Ullesthorpe / Leicestershire (UK), ca. 1760–1798
Location:	UK (?), Formerly (ca. 1978) in private collection Wolverhampton, UK

FT74

Maker:	BOOSEY & Co.
Instrument:	x-key tenoroon
Provenance / Date:	London, 1899
Location:	[Unknown, historical catalogue reference]
Reference / Notes:	Boosey & Hawkes Archive. B&Co. Instruments Wood 3 (1896–1904). HM / B&H A227 / 015

FT75

Maker:	BOOSEY & Co.
Instrument:	10-key tenoroon / [F?]
Provenance / Date:	London, ca. 1880
Location:	[London (UK), Horniman Museum]
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 340 The instrument was not located in the Museum, (11 / 2022)

FT76

Maker:	BUFFET-CRAMPON
Instrument:	x-key tenoroon
Provenance / Date:	Paris, ca. 1900
Location:	Leeds (UK), City Museum
Reference / Notes:	Langwill, Bassoon (1948), 36

FT77

Maker:	CAHUSAC, Thomas
Instrument:	4-key tenoroon
Provenance / Date:	London, 1788
Location:	Halifax (UK), Bankfield Museum MI 37 Byrne, The Church Band (1964), 95
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 347 Young, 4900 Instruments (1993), 45

FT78

Maker:	COLLINGS, Joseph
Instrument:	3-key fagottino / octave
Provenance / Date:	United Kingdom, ca. 1771–1773
Location:	Formerly in Frank Rendell collection
Reference / Notes:	Waterhouse, New Langwill (1993), 69

FT79

Maker:	CUSTODE, Cristofaro
Instrument:	4-key fagottino / octave
Provenance / Date:	Naples, ca. 1800–1830
Location:	Rome (IT), Museo Nationale degli Strumenti Musicali 773 / 231
Reference / Notes:	Cervelli, Galleria Armonica (1994)

FT80

Maker:	DE ROSA, R.
Instrument:	11-key tenoroon / G
Provenance / Date:	Naples, ca. 1835
Location:	London (UK), Victoria & Albert Museum 46–1884
Reference / Notes:	Jansen, The Bassoon (1978), Vol 1, 466
	Baines, V & A Museum (1998), 98
Online:	https://collections.vam.ac.uk/item/O249372/ tenoroon-de-rosa-r/

FT81

Maker:	EICHENTOPF, Johann H.
Instrument:	3-key fagottino / octave
Provenance / Date:	Germany, ca. 1740
Location:	Halle (DE), Händel-Haus
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 365
	Heyde, Händel-Haus Halle (1980), 276–277
	Waterhouse, New Langwill (1993), 69

FT82

Maker:	EISENBRANDT, Johann Benjamin
Instrument:	x-key tenoroon
Provenance / Date:	Göttingen, ca. 1785–1822
Location:	Berlin (DE), Musikinstrumenten Museum, Staatliches Institut für Musikforschung 2972
Reference / Notes:	Otto, MIM Berlin (1965), 69

FT83

Maker:	EVETTE & SCHAEFFER
Instrument:	17-key tenoroons / Eb, F, G
Provenance / Date:	Paris, 1889 & 1912
Location:	[Unknown, historical catalogue reference]
Reference / Notes:	Pierre, La facture (1890), 26–28 Evette & Schaeffer (1912), 21–25 Waterhouse, New Langwill (1993), 104 Presented in the Exposition Universelle Paris 1889

FT84

Maker:	GEROCK, Christopher
Instrument:	x-key tenoroon
Provenance / Date:	London, ca. 1804–1837
Location:	St. Petersburg (RU), Muzei Muzïkalnïch Instrumentov Teatra, Muzïki, I Kinematografii 527
Reference / Notes:	Kopp, The Bassoon (2012), 226

FT85

Maker:	GOULDING, PHIPPS, AND D'ALMAINE
Instrument:	x-key tenoroon
Provenance / Date:	London, 1785–1834
Location:	[Unknown, historical catalogue reference]
Reference / Notes:	Lasocki, New Light (2010), 129

FT86

Maker:	GRENSER, Augustin
Instrument:	4-key fagottino / octave
Provenance / Date:	Dresden, ca. 1744–1798
Location:	Copenhagen (DK), Musikmuseet (Carl Claudius Samling) E.140
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 382 Waterhouse, New Langwill (1993), 113

FT87

Maker:	GRENSER, Heinrich
Instrument:	5-key fagottino / octave
Provenance / Date:	Dresden, ca. 1796–1813
Location:	Frankfurt am Main (DE), Historisches Museum X26.469
Reference / Notes:	Young, 4900 Instruments (1993), 105

FT88

Maker:	HECKEL, Wilhelm
Instrument:	18-key tenoroon / F
Provenance / Date:	Biebrich, 1907
Location:	[Unknown, historical catalogue reference]
Reference / Notes:	Heckel, Verzeichnis (ca. 1907), 7 Kopp, The Bassoon (2012), 227

FT89

Maker:	HIRSBRUNNER (Gebrüder)
Instrument:	6-key tenoroon / F
Provenance / Date:	Sumiswald (CH), ca. 1815–1848
Location:	Lucerne (CH), Haus der Musik 134
Reference / Notes:	von Steiger, Hirsbrunner (2016), 181–200:196

FT90

Maker:	KEY, Thomas
Instrument:	x-key fagottino
Provenance / Date:	London (UK), ca. 1805–1858
Location:	Formerly in Rudall Carte collection
Reference / Notes:	Waterhouse, New Langwill (1993), 204

FT91

Maker:	KRAUS, I.
Instrument:	3-key tenoroon / [G?]
Provenance / Date:	Germany, ca. 1750–1790
Location:	Munich (DE), Musikinstrumentenmuseum im Münchner Stadtmuseum Mu 120
Reference / Notes:	Young, 4900 Instruments (1993), 141

FT92

Maker:	KRAUS, I.
Instrument:	3-key tenoroon / [G?]
Provenance / Date:	Germany, ca. 1750–1790
Location:	Hamamatsu-city (JP), Hamamatsu Museum of Musical Instruments A-02I3R
Reference / Notes:	Young, The Look of Music (1980), 98 Young, 4900 Instruments (1993), 141 Formerly in Rosenbaum Collection

FT93

Maker:	KRAUS, I.
Instrument:	4-key tenoroon / [G?]
Provenance / Date:	Germany, ca. 1750–1790
Location:	Salzburg (AT), Salzburg Museum (formerly: Museum Carolino Augusteum) Car-Aug 15 / 7
Reference / Notes:	Birsak, Salzburg (1973), 40 Young, 4900 Instruments (1993), 141

FT94

Maker:	KRAUS, I.
Instrument:	4-key tenoroon / [G?]
Provenance / Date:	Germany, ca. 1750–1790
Location:	Eisenach (DE), Historische Musikinstrumente im Bachhaus I-158
Reference / Notes:	Heyde, Bachhaus Eisenach (1976) Jansen, The Bassoon (1978), Vol. 1, 418 Young, 4900 Instruments (1993), 141

FT95

Maker:	KÜSS, Wolfgang
Instrument:	9-key tenoroon
Provenance / Date:	Vienna, ca. 1810–1839
Location:	Biebrich (DE), Heckel Museum PF-2
Reference / Notes:	Waterhouse, New Langwill (1993), 218

FT96

Maker:	KÜSS, Wolfgang
Instrument:	9-key tenoroon
Provenance / Date:	Vienna, ca. 1810–1840
Location:	Prague (CZ), Národní muzeum, Czech museum of music 12 / 102
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 412

FT97

Maker:	LE BRETON
Instrument:	Small-size bassoon referred to as "counter-tenor basson"
Provenance / Date:	Paris, ca. 1692
Location:	[Unknown, historical catalogue reference]
Reference / Notes:	Waterhouse, New Langwill (1993), 228 Kopp, The Bassoon (2012), 223

FT98

Maker:	LOT, Martin
Instrument:	5-key fagottino / octave
Provenance / Date:	Paris, ca. 1743–1785
Location:	Oxford (UK), Bate Collection of Musical Instruments 334
Reference / Notes:	Baines, The Bate Collection (1976), 29 Jansen, The Bassoon (1978), Vol. 1, 434 Young, 4900 Instruments (1993), 149

FT99

Maker:	LOT, Martin
Instrument:	3-key fagottino / octave
Provenance / Date:	Paris, ca. 1743–1786
Location:	London (UK), Royal College of Music (Donaldson Collection)
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 434 Matei, Peculiarities (2001), 75

FT100

Maker:	MAGVINI (MAGRINI)
Instrument:	8-key tenoroon / [F?]
Provenance / Date:	Vienna, ca. 1800
Location:	Kronach (DE), Collection of Guntram Wolf
Reference / Notes:	Hubmann, Hochgestimmte Fagotte (2011), 83

FT101

Maker:	MILHOUSE, William
Instrument:	8-key tenoroon / G
Provenance / Date:	London, ca. 1799–1828
Location:	Vermillion / SD (US), National Music Museum NMM 2671
Reference / Notes:	Young, 4900 Instruments (1993), 163
Online:	https://emuseum.nmmusd.org/objects/5953/tenor-bassoon?ctx=f29b325f-bdf0-4f05-bed9-85760d6a2d1b&idx=21

FT102

Maker:	MILHOUSE, William
Instrument:	6-key fagottino / octave
Provenance / Date:	London, ca. 1800
Location:	Tucson / AZ, (US), private collection

FT103

Maker:	MORTON, Alfred W.
Instrument:	15-key tenoroon / F
Provenance / Date:	London, ca. 1870
Location:	Hamamatsu-city (JP), Hamamatsu Museum of Musical Instruments
Reference / Notes:	Waterhouse, New Langwill (1993), 273 Formerly in Rosenbaum Collection

FT104

Maker:	PEALE, T.
Instrument:	7-key tenoroon / [G?]
Provenance / Date:	United Kingdom, ca. 1870
Location:	Oxford (UK), Bate Collection of Musical Instruments 335
Reference / Notes:	Baines, The Bate Collection (1976), 2 Jansen, The Bassoon (1978), Vol. 1, 459 Waterhouse, New Langwill (1993), 294
Online:	http://minim.ac.uk/index.php/explore/?instrument=3922

FT105

Maker:	PELITTI
Instrument:	12-key tenoroon / F
Provenance / Date:	Milan, ca. 1828–1870
Location:	Formerly in John B. Taylor Instrument Collection (1875–1963), Williamstown, MA (US)
Reference / Notes:	Kopp, The Bassoon (2012), 226

FT106

Maker:	PRUDENT [Thierriot]
Instrument:	x-key fagottino / octave
Provenance / Date:	Paris, ca. 1765–1783
Location:	[Unknown, historical catalogue reference]
Reference / Notes:	Jeltsch, Prudent (1997), 151 Postmortem inventory of Prudent included several octave bassoons.

FT107

Maker:	ROTTENBURGH, Godfrius A.
Instrument:	x-key fagottino / octave
Provenance / Date:	Brussels, ca. 1760
Location:	Former collection J.-A. Stellfeld olim 1100
Reference / Notes:	Baeck-Schilders, Bibliotheca Stellfeldiana (2004), 203–223 The collection catalogue entry mentioned in this reference states: "1100. Basson piccolo. En acajou fonce. Marque C. A., a Rottenburg".

FT108

Maker:	ROTTENBURGH, Godfrius A.
Instrument:	x-key fagottino / octave
Provenance / Date:	Brussels, ca. 1760
Location:	Former collection J.-A. Stellfeld olim 1100
Reference / Notes:	Baeck-Schilders, Bibliotheca Stellfeldiana (2004), 203–223 The collection catalogue entry mentioned in this reference states: "1102. Basson piccolo. En acajou fonce. Marque C. A., a Rottenburg".

FT109

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	14-key tenoroon / F
Provenance / Date:	Paris, 1840
Location:	Edinburgh (UK), University of Edinburgh 169
Reference / Notes:	Myers, Edinburgh Univ. Collection (1993), 9
Online:	https://collections.ed.ac.uk/mimed/record/15952 https://collections.ed.ac.uk/stcecilias/record/95854

FT110

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	12-key tenoroon / F
Provenance / Date:	Paris, 1843
Location:	Private collection AVB-990
Online:	http://instrumantiq.com/images/AVB/AVB-990-basson-Savary-Jeune.jpg

FT111

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	11-key tenoroon / F
Provenance / Date:	Paris, 1832
Location:	Biebrich (DE), Heckel Museum PF-1
Reference / Notes:	Young, 4900 Instruments (1993), 199

FT112

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	15-key tenoroon / F
Provenance / Date:	Paris, ca. 1840
Location:	Oxford (UK), Bate Collection of Musical Instruments 336
Reference / Notes:	Baines, The Bate Collection (1976), 29 Jansen, The Bassoon (1978), Vol. 1, 472

FT113

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	15-key tenoroon / F
Provenance / Date:	Paris, ca. 1835–1850
Location:	Perth, (AU)
Reference / Notes:	Young, 4900 Instruments (1993), 199 Formerly in Bate Collection (337), Oxford (UK)

FT114

Maker:	SAVARY JEUNE, Jean-Nicholas
Instrument:	x-key tenoroon / F
Provenance / Date:	Paris, 1842
Location:	North Carolina, USA, Private collection

FT115

Maker:	SCHERER, Johannes & Georg H.
Instrument:	4-key fagottino / octave
Provenance / Date:	Butzbach, ca. 1750–1778
Location:	Kassel (DE), Mollenhauer (instrument makers collection)

FT116

Maker:	SCHLEGEL, Jeremias
Instrument:	4-key fagottino / octave
Provenance / Date:	Basel, ca. 1752–1792
Location:	Copenhagen (DK), Musikmuseet (Carl Claudius Samling) E.132
Reference / Notes:	Young, 4900 Instruments (1993), 213

FT117

Maker:	SCHOLL, Franz
Instrument:	x-key fagottino / octave
Provenance / Date:	Vienna, 1803
Location:	[Unknown, historical catalogue reference 1803]
Reference / Notes:	Waterhouse, New Langwill (1993), 361 Kopp, The Bassoon (2012), 225

FT118

Maker:	SCHRAMME, C.
Instrument:	3-key fagottino / octave
Provenance / Date:	Germany, ca. 1700–1740
Location:	Prague (CZ), Národní muzeum, Czech museum of music E. 1374
Reference / Notes:	Waterhouse, New Langwill (1993), 362

FT119

Maker:	SCHUSTER, Gottfried
Instrument:	6-key fagottino / octave
Provenance / Date:	Markneukirchen, ca. 1820
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 482
Location:	Markneukirchen (DE), Musikinstrumenten-Museum Markneukirchen 0105

FT120

Maker:	SPADA, Gaetano
Instrument:	x-key tenoroon
Provenance / Date:	Bologna, 1873
Reference / Notes:	de Castrone-Marchesi, Relazioni (1873), 55

FT121

Maker:	TAUBER, Kaspar
Instrument:	9-key tenoroon / F
Provenance / Date:	Vienna, ca. 1798–1829
Location:	Salzburg (AT), Salzburg Museum (formerly: Museum Carolino Augusteum) Car-Aug 15 / 8
Reference / Notes:	Birsak, Salzburg (1973), 40 Waterhouse, New Langwill (1993), 395 Young, 4900 Instruments (1993), 235

FT122

Maker:	TAUBER, Kaspar
Instrument:	12-key tenoroon / F
Provenance / Date:	Vienna, ca. 1798–1829
Location:	Berlin (DE), Musikinstrumenten Museum. Staatliches Institut für Musikforschung 1873
Reference / Notes:	Otto, MIM Berlin (1965), 69 Young, 4900 Instruments (1993), 235

FT123

Maker:	TÖLCKE, Heinrich Carl
Instrument:	4-key fagottino / octave
Provenance / Date:	Braunschweig, ca. 1770–1780
Location:	Eisenach (DE), Bachhaus I 157
Reference / Notes:	Heyde, Bachhaus Eisenach (1976), 238 Jansen, The Bassoon (1978), Vol. 1, 506 Waterhouse, New Langwill (1993), 401

FT124

Maker:	TREUMANN
Instrument:	x-key tenoroon
Provenance / Date:	Lyon, ca. 1825–1850
Location:	Paris (FR)
Reference / Notes:	Waterhouse, New Langwill (1993), 403 Formerly in La Collection Musicale de Geneviève Thibault

FT125

Maker:	WUSSINGER, Franz
Instrument:	9-key tenoroon
Provenance / Date:	Klagenfurt, ca. 1810–1841
Location:	Wien (AT), Gesellschaft der Musikfreunde (on deposit at Kunsthistorisches Museum)
Reference / Notes:	Mandyczewski, Zusatz-Band (1912), 170 Waterhouse, New Langwill (1993), 438

FT126

Maker:	MORTON & SONS, also stamped JOHN PARR
Instrument:	16-key tenoroon
Provenance / Date:	London, ca. 1880–1890
Location:	Formerly in the late John Parr Collection, Sheffield (UK),
Reference / Notes:	Lindstead, John Parr (1945), 172 UK auction 8 December 2023 https://www.the-saleroom.com/en-gb/auction-catalogues/gardiner-houlgate/catalogue-id-srgard10258/lot-179b1144-7388-49ac-b1be-b0bb00caefa9?utm_source=auction-alert&utm_medium=email&utm_campaign=auction-alert&utm_content=lot-view-link&queryId=8243d1ffcce60e88f27cbac55382e1a3 (29 January 2024)

Miscellaneous Small-Sized Instruments

M1

Maker:	ANONYMOUS 20
Instrument:	3-key fagottino / octave
Provenance / Date:	[Unknown]
Reference / Notes:	20th century copy
Location:	Amsterdam (NL), private collection

M2

Maker:	WOOD, Georg
Instrument:	7-key alto fagotto; examined
Provenance / Date:	London, ca. 1835
Location:	Brussels (BE), Musée des Instruments de Musique 944
Reference / Notes:	Hybrid instrument with clarinet-like mouthpiece
Online:	https://doi.org/10.5281/zenodo.2649457

M3

Maker:	WOOD, Georg & IVY
Instrument:	8-key alto fagotto, examined
Provenance / Date:	London, ca. 1840
Location:	Boston / MA (US), Museum of Fine Arts 17.189
Reference / Notes:	Illustrated Catalogue Music Loan (1909), 192 Hybrid instrument with clarinet-like mouthpiece
Online:	https://doi.org/10.5281/zenodo.2649035

M4

Maker:	FORNIARI, Andrea
Instrument:	Experimental instrument similar to baritone oboe
Provenance / Date:	Venice, ca. 1800–1832
Location:	Milan (IT), Conservatorio "Giuseppe Verdi"

M5

Maker:	HAWKES & SON
Instrument:	12-key fagottino
Provenance / Date:	London, 1923
Location:	Oxford (UK), Bate Collection of Musical Instruments 333

M6

Maker:	HAWKES & SON
Instrument:	12-key fagottino
Provenance / Date:	London, ca. 1925
Location:	Brighton (UK), Albert C. Spencer Collection, Royal Pavillion and Museums Brighton MS100158

M7

Maker:	MEIKLE, William
Instrument:	8-key caledonica
Provenance / Date:	Strathaven, 1820s
Location:	Edinburgh (UK), University of Edinburgh
Reference / Notes:	Marcuse, Musical Instruments (1964), 12 Conical instrument invented by Meikle with bassoon shape, played with a clarinet-like mouthpiece.

M8

Maker:	PIATET & BENOIT
Instrument:	x-key alto fagotto
Provenance / Date:	Lyon, ca. 1850
Location:	Formerly in the late John Parr Collection, Sheffield (UK)
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 452 Hybrid instrument with clarinet-like mouthpiece

M9

Maker:	[WOOD, George & IVY, unstamped]
Instrument:	7-key alto fagotto
Provenance / Date:	London, ca. 1830
Location:	London (UK), Victoria and Albert Museum 47-1884
Reference / Notes:	Baines, V & A Museum (1998), 99
	Hybrid instrument with a clarinet-like mouthpiece

M10

Maker:	MILHOUSE, William and KEY, T.
Instrument:	8-key tenoroon
Provenance:	London, ca. 1795–1820
Location:	Cardiff (UK), Amgueddfa Cymru – Museum Wales 32.440
Reference / Notes:	Jansen, The Bassoon (1978), Vol. 1, 440
	Ivory mouthpiece for a single reed

II. Short List of Makers in Alphabetical Order

ID NR	MAKER	INSTRUMENT	PROVENANCE / DATE
FT1	ADLER, Frédéric G.	11-key tenoroon / F	Paris, ca. 1835
FT2	ADLER, Frédéric G.	13-key tenoroon / F	Paris, ca. 1840
FT61	ADLER, Frédéric G.	11-key tenoroon / F	Paris, ca. 1840
FT3	ANONYMOUS 1	4-key fagottino / octave	ca. 1820–1850
FT62	ANONYMOUS 2	x-key tenoroon / F	ca. 1830
FT51	ANONYMOUS 3	10-key tenoroon / F	[United Kingdom], ca. 1830
FT4	ANONYMOUS 4	4-key fagottino / octave	[Germany], ca. 1780
FT63	ANONYMOUS 5	6-key fagottino / octave	[United Kingdom], ca. 1800
FT6	ANONYMOUS 7	8-key tenoroon / G	[Vienna/Naples], ca. 1815
FT7	ANONYMOUS 8	3-key fagottino / octave	[Germany], ca. 1730–1770
FT52	ANONYMOUS 9	6-key fagottino / octave	[United Kingdom] ca. 1800–1825
FT64	ANONYMOUS 10	7-key fagottino / octave	[France], ca. 1850–1898
FT40	ANONYMOUS 11	4-key fagottino / octave	ca. 1750–1790
FT46	ANONYMOUS 12	5-key tenoroon / G	[Germany], ca. 1815
FT65	ANONYMOUS 13	3-key fagottino / octave	[France], ca. 1700–1780
FT66	ANONYMOUS 14	10-key tenoroon / F	[United Kingdom], ca. 1820
FT67	ANONYMOUS 15	6-key tenoroon / [G?]	[United Kingdom], ca. 1800
FT68	ANONYMOUS 16	14-key tenoroon / [F?]	[Germany], ca. 1825–1850
FT69	ANONYMOUS 17	6-key tenoroon / F	[United Kingdom], ca. 1800
FT70	ANONYMOUS 18	0-key unfinished fagottino	ca. 1820
FT71	ANONYMOUS 19	13-key tenoroon / G	[France], 1860–1870
M1	ANONYMOUS 20	3-key fagottino / octave	20th century copy
FT8	ASTOR, Georg & HORWOOD	6-key tenoroon / [F?]	London, ca. 1815
FT72	BABB, G.	6-key tenoroon / [G?]	London, ca. 1780
FT9	BLOCKLEY, John	4-key tenoroon / G	Ullesthorpe, ca. 1780
FT73	BLOCKLEY, John	6-key tenoroon / [G?]	Ullesthorpe, ca. 1760–1798
FT10	BONACCORSI	7-key fagottino / octave	Barga, ca. 1815

ID NR	MAKER	INSTRUMENT	PROVENANCE / DATE
FT74	BOOSEY & Co.	x-key tenoroon	London, 1899
FT75	BOOSEY & Co.	10-key tenoroon / [F?]	London, ca. 1880
FT76	BUFFET-CRAMPON	x-key tenoroon	Paris, ca. 1900
FT56	BÜHNER & KELLER	7-key fagottino / octave	Strasbourg, ca. 1810
FT11	CAHUSAC, Thomas	6-key tenoroon / [G?]	London, 1789
FT77	CAHUSAC, Thomas	4-key tenoroon	London, ca. 1788
FT12	CASTLAS	7-key fagottino / octave	Turin, ca. 1800
FT78	COLLINGS, Joseph	3-key fagottino / octave	United Kingdom, ca. 1771–1773
FT79	CUSTODE, Cristofaro	4-key fagottino / octave	Naples, ca. 1800–1830
FT80	DE ROSA, R.	11-key tenoroon / G	Naples, ca. 1830
FT13	DELUSSE, Christophe	7-key fagottino / octave	Paris, ca. 1783
FT14	DENNER, Johann C.	3-key fagottino / octave	Nuremberg, ca. 1700
FT35	DUPRÉ, Joseph	0-key unfinished fagottino	Tournai, ca. 1820–1850
FT81	EICHENTOPF, Johann H.	3-key fagottino / octave	Germany, ca. 1740
FT82	EISENBRANDT, Johann Benjamin	x-key tenoroon	Göttingen, ca. 1785–1822
FT83	EVETTE & SCHAEFFER	17-key tenoroons / Eb, F, G	Paris, 1889 & 1912
M4	FORNIARI, Andrea	Experimental instrument similar to baritone oboe	Venice, ca. 1800–1832
FT36	GAUTROT Aîné	16-key tenoroon / F	Paris, ca. 1845–1884
FT84	GEROCK, Christopher	x-key tenoroon	London, ca. 1804–1837
FT85	GOULDING, PHIPPS, AND D'ALMAINE	x-key tenoroon	London, 1785–1834
FT86	GRENSER, Augustin	4-key fagottino / octave	Dresden, ca. 1744–1798
FT15	GRENSER, Heinrich & WIESNER, Samuel	6-key fagottino / octave	Dresden, ca. 1824
FT16	GRENSER, Heinrich	5-key fagottino / octave	Dresden, ca. 1800
FT87	GRENSER, Heinrich	5-key fagottino / octave	Dresden, ca. 1800
FT50	GRENSER, Heinrich	6-key fagottino / octave	Dresden, ca. 1806–1813
M5	HAWKES & SON	12-key fagottino	London, 1923

ID NR	MAKER	INSTRUMENT	PROVENANCE / DATE
M6	HAWKES & SON	12-key fagottino	London, 1925
FT88	HECKEL, Wilhelm	18-key tenoroon / F	Biebrich, 1907
FT41	HIRSBRUNNER (Gebrüder)	12-key tenoroon / F	Sumiswald, ca. 1830
FT89	HIRSBRUNNER (Gebrüder)	6-key tenoroon / F	Sumiswald, ca. 1815–1848
FT17	JACOBY Fils	5-key fagottino / octave	Auch, ca. 1785
FT90	KEY, Thomas	x-key fagottino	London, ca. 1805–1858
FT18	KRAUS, I.	4-key tenoroon / G	Germany, ca. 1750–1790
FT91	KRAUS, I.	3-key tenoroon / [G?]	Germany, ca. 1750–1790
FT92	KRAUS, I.	3-key tenoroon / [G?]	Germany, ca. 1750–1790
FT93	KRAUS, I.	4-key tenoroon / [G?]	Germany, ca. 1750–1790
FT94	KRAUS, I.	4-key tenoroon / [G?]	Germany, ca. 1750–1790
FT95	KÜSS, Wolfgang	9-key tenoroon	Vienna, ca. 1810–1839
FT49	KÜSS, Wolfgang	10-key tenoroon	Vienna, ca. 1810–1839
FT96	KÜSS, Wolfgang	9-key tenoroon	Vienna, ca. 1810–1840
FT59	KUTERUF, J.	3-key fagottino / octave	Germany, ca. 1700–1760
FT97	LE BRETON	Small-size bassoon refered as “counter-tenor basson”	Paris, ca. 1692
FT43	LEIBERZ, Johann Peter	7-key fagottino / octave	Koblenz, ca. 1825–1835
FT98	LOT, Martin	5-key fagottino / octave	Paris, ca. 1743–1785
FT99	LOT, Martin	3-key fagottino / octave	Paris, ca. 1743–1785
FT100	MAGVINI (MAGRINI)	8-key tenoroon / [F?]	Vienna, ca. 1800
FT37	MARZOLI, A.G. Philippe Tribert Marzoli Boehm (TMB)	15-key tenoroon / F	Paris, ca. 1865
M7	MEIKLE, William	8-key caledonica	Strathaven, 1825
FT19	MERKLEIN, I.	8-key tenoroon / F	Vienna, ca. 1835
FT57	MILHOUSE, William	4-key tenoroon / [G?]	London, ca. 1800
FT101	MILHOUSE, William	8-key tenoroon / G	London, ca. 1799–1828
FT102	MILHOUSE, William	6-key fagottino / octave	London, ca. 1800
M10	MILHOUSE, William and KEY, T.	8-key tenoroon	London, ca. 1795–1820

ID NR	MAKER	INSTRUMENT	PROVENANCE / DATE
FT126	MORTON & SONS, Stamped JOHN PARR	x-key tenoroon	London, 1880–1890
FT103	MORTON, Alfred W.	15-key tenoroon / F	London, ca. 1870
FT20	MÜLLER	4-key fagottino / octave	Germany, ca. 1770
FT53	PACE, Charles	9-key tenoroon / F	London, ca. 1825
FT104	PEALE, T.	7-key tenoroon / [G?]	United Kingdom, ca. 1800–1830
FT105	PELITTI	12-key tenoroon / F	Milan, ca. 1828–1870
M8	PIATET & BENOIT	x-key alto fagotto	Lyon, ca. 1850
FT21	PORTHAUX, Dominique A.	9-key tenoroon /F	Paris, ca. 1808
FT22	PROFF, François X.	5-key tenoroon / G	Tours, ca. 1800
FT106	PRUDENT [Thierriot]	x-key fagottino / octave	Paris, ca. 1765–1783
FT47	RIVA, Giacinto	13-key tenoroon / F	Ferrara, ca. 1860–1870
FT23	ROTTENBURGH, Godfrius A.	4-key fagottino / octave	Brussels, ca. 1760
FT107	ROTTENBURGH, Godfrius A.	x-fagottino / octave	Brussels, ca. 1760
FT108	ROTTENBURGH, Godfrius A.	x-key fagottino / octave	Brussels, ca. 1760
FT55	SAVARY JEUNE, Jean-Nicholas	10-key fagottino / F	Paris, 1835
FT111	SAVARY JEUNE, Jean-Nicholas	11-key tenoroon / F	Paris, 1832
FT42	SAVARY JEUNE, Jean-Nicholas	11-key tenoroon / F	Paris, ca. 1840
FT60	SAVARY JEUNE, Jean-Nicholas	11-key tenoroon / G	Paris, 1824
FT110	SAVARY JEUNE, Jean-Nicholas	12-key tenoroom / F	Paris, 1843
FT26	SAVARY JEUNE, Jean-Nicholas	12-key tenoroon / F	Paris, 1838
FT38	SAVARY JEUNE, Jean-Nicholas	12-key tenoroon / F	Paris, ca. 1842
FT25	SAVARY JEUNE, Jean-Nicholas	13-key tenoroom / F	Paris, 1827
FT54	SAVARY JEUNE, Jean-Nicholas	14-key tenoroon / F	Paris, 1845–1850
FT109	SAVARY JEUNE, Jean-Nicholas	14-key tenoroon / F	Paris, 1840
FT112	SAVARY JEUNE, Jean-Nicholas	15-key tenoroon / F	Paris, ca. 1840
FT113	SAVARY JEUNE, Jean-Nicholas	15-key tenoroon / F	Paris, ca. 1835–1850
FT27	SAVARY JEUNE, Jean-Nicholas	16-key tenoroon / F	Paris, 1841
FT114	SAVARY JEUNE, Jean-Nicholas	x-key tenoroon / F	Paris, 1842
FT24	SAVARY PERE	5-key tenoroon / G	Paris, ca. 1810

ID NR	MAKER	INSTRUMENT	PROVENANCE / DATE
FT58	SAXTON, Thomas	4-key tenoroon / G	Nottingham, ca. 1793–1799
FT28	SCHERER, Johannes & Georg H.	4-key fagottino / octave	Butzbach, ca. 1760
FT29	SCHERER, Johannes & Georg H.	4-key fagottino / octave	Butzbach, ca. 1764
FT44	SCHERER, Johannes & Georg H.	4-key fagottino / octave	Butzbach, ca. 1760–1770
FT30	SCHERER, Johannes & Georg H.	5-key fagottino / octave	Butzbach, ca. 1760–1778
FT39	SCHERER, Johannes & Georg H.	4-key fagottino / octave	Butzbach, ca. 1750–1778
FT115	SCHERER, Johannes & Georg H.	4-key fagottino / octave	Butzbach, ca. 1750–1778
FT116	SCHLEGEL, Jeremias	4-key fagottino / octave	Basel, ca. 1752–1792
FT117	SCHOLL, Franz	x-key fagottino / octave	Vienna, 1803
FT118	SCHRAMME, C.	3-key fagottino / octave	Germany, ca. 1700–1740
FT5	SCHUBERT, Louis-Paul	13-key tenoroon / F	Paris, ca. 1860
FT119	SCHUSTER, Gottfried	6-key fagottino / octave	Markneukirchen, ca. 1820
FT120	SPADA, Gaetano	x-key tenoroon	Bologna, 1873
FT45	STEHLE, Johann	12-key tenoroon / F	Vienna, ca. 1850–1860
FT31	TAUBER, Kaspar	6-key tenoroon / [G?]	Vienna, ca. 1815
FT121	TAUBER, Kaspar	9-key tenoroon /F	Vienna, ca. 1798–1829
FT122	TAUBER, Kaspar	12-key tenoroon / F	Vienna, ca. 1798–1829
FT48	TAUBER, Kaspar	9-key tenoroon	Vienna, ca. 1798–1829
FT32	TÖLCKE, Heinrich Carl	4-key fagottino / octave	Braunschweig, ca. 1780
FT123	TÖLCKE, Heinrich Carl	4-key fagottino / octave	Braunschweig, ca. 1751–1835
FT124	TREUMANN	x-key tenoroon	Lyon, ca. 1825–1850
FT33	TUERLINCKX, Jean A.	4-key fagottino / octave	Mechelen, ca. 1795
FT34	TUERLINCKX, Jean A.	5-key tenoroon / F	Mechelen, ca. 1820
M2	WOOD, George	7-key alto fagotto	London, ca. 1835
M3	WOOD, George & IVY	8-key alto fagotto	London, ca. 1840
M9	[WOOD, George & IVY, unstamped]	7-key alto fagotto	London, ca. 1830
FT125	WUSSINGER, Franz	9-key tenoroon	Klagenfurt, ca. 1810–1841

III. Bibliographic References

Baeck-Schilders, Bibliotheca Stellfeldiana (2004)	Hedwige Baeck-Schilders, "The Bibliotheca Stellfeldiana", in: *Revue belge de Musicologie / Belgisch Tijdschrift voor Muziekwetenschap* 58 (2004), 203–223.
Baines, The Bate Collection (1976)	Anthony Baines, *The Bate Collection of Historical Wind Instruments: Catalogue of the Instruments*, Oxford: The Bate Collection, Faculty of Music, University of Oxford 1976.
Baines, V & A Museum (1998)	Anthony Baines, *Catalogue of musical instruments in the Victoria and Albert Museum:* Part II: *non-keyboard instruments*, London: V&A publications 1998.
Bessaraboff, Musical instruments (1941)	Nicholas Bessaraboff, *Ancient European musical instruments: An Organological Study of the Musical Instruments in the Leslie Lindsey Mason Collection at the Museum of Fine Arts Boston*, Boston: Harvard University Press 1941.
Birsak, Salzburg (1973)	Kurt Birsak, *Die Holzblasinstrumente im Salzburger Museum Carolino Augusteum*, Salzburg: Salzburger Museum Carolino Augusteum 1973.
Boosey & Hawkes Archive (1896–1904)	Boosey & Hawkes Archive. *B&Co. Instruments Wood 3 (1896–1904)*. Horniman Museum, London, B&H A227/015.
Bordas, Instrumentos musicales (2008)	Cristina Bordas, *Instrumentos musicales en colecciones españolas*, 2 vols., Madrid: Centro de Documentación de Música y Danza/INAEM, Ministerio de Educación y Cultura, 2nd ed. 2008.
Byrne, The Church Band (1964)	Byrne, Maurice, "The Church Band at Swalcliffe", in: *The Galpin Society Journal* 17 (1964), 89–98.
Catalogo Kraus (1901)	[A. Kraus (ed.)], *Catalogo della Collezione etnografico-musicale Kraus in Firenze*, Firenze: Salvadore Landi 1901.
Cervelli, Galleria Armonica (1994)	Luisa Cervelli (ed.), *La Galleria Armonica: Catalogo del Museo degli Strumenti Musicali di Roma*, Rome: Istituto Poligrafico e Zecca dello Stato 1994.

Crosby Brown, Collection (1904)	*Catalogue of the Crosby Brown Collection of Musical Instruments of All Nations: I. Europe*, The Metropolitan Museum of Art, New York: 1902, Vol. I, 149, ill.
de Castrone-Marchesi, Relazioni (1873)	Salvatore de Castrone-Marchesi, *Relazioni dei Giurati Italiani sulla Esposizione Universale di Vienna del 1873*, Fascicolo I, Gruppo XV: *Strumenti Musicali*, Milano: dalla Regia Stamperia 1873, 47–63.
De Wolfe Howe, Casadesus (1931)	Mark A. De Wolfe Howe, "Catalogue of the Casadesus Collection of old musical instruments", in: *The Boston Symphony Orchestra 1881–1931*, Boston: Houghton Mifflin Company 1931.
Domínguez, Fagottini (2019)	Áurea Domínguez, "Fagottini in the Philarmonie de Paris", in: *Glareana* 2019/2, 6–19.
Evette & Schaeffer (1912)	[Paul] Evette & [Ernest] Schaeffer, *Manufacture Spéciàle des instruments de Musique*, Paris: Evette & Schaeffer 1912.
Gétreau, Aux origines (1996)	Florence Gétreau, *Aux origines du musée de la musique: les collections instrumentales du Conservatoire de Paris. 1793–1993*, Paris: Klincksieck, Réunion des Musées Nationaux 1996.
Goltz, Meininger Museen (2012)	Maren Goltz, *Die Musikinstrumenten-Sammlung der Meininger Museen: Vollständiges Bestandsverzeichnis mit ausführlicher Dokumentation*, Meiningen: Meininger Museen 2012.
Heckel, Verzeichnis (ca. 1907)	[Fa. Heckel,] *Verzeichnis über Künstler-Instrumente,* Ausgabe 204, Biebrich: Heckel [ca. 1907].
Heyde, Bachhaus Eisenach (1976)	Herbert Heyde, *Historische Musikinstrumente im Bachhaus Eisenach*, Eisenach: Bachhaus Eisenach 1976.
Heyde, Händel-Haus Halle (1980)	Herbert Heyde, *Händel-Haus Halle Musik-instrumentensammlung: Blasinstrumente, Orgeln, Harmoniums*, Halle: [Händel-Haus] 1980.
Heyde, Rohrblatt-instrumente Leipzig (1979)	Herbert Heyde, *Rohrblattinstrumente* [Manuskript für: Musikinstrumenten-Museum der Karl-Marx-Universität Leipzig. Katalog, Bd. 7], Leipzig 1979.

Heyde, Über Rohrblattinstrumente (1979)	Herbert Heyde, "Über Rohrblattinstrumente des Musikinstrumentenmuseums der Karl-Marx-Universität Leipzig", in: *Tibia* 4/H. 3 (1979), 378–387.
Hubmann, Hochgestimmte Fagotte (2011)	Klaus Hubmann, "Hochgestimmte Fagotte (Tenorfagotte) in der Musik vom späten 16. bis zum späten 18. Jahrhundert", in: Christian Ahrens, Gregor Klinke (eds.), *Flöte, Oboe, Klarinette und Fagott: Holzblasinstrumente bis zum Ende des 18. Jahrhunderts,* München and Salzburg: Katzbichler 2011, 71–84.
Illustrated Catalogue Music Loan (1909)	*An Illustrated Catalogue of the Music Loan Exhibition held* […] *by the Worshipful Company of Musicians at Fishmongers' Hall* [London]*, June and July 1904*, London: Novello and Company 1909.
Jansen, The Bassoon (1978)	Will Jansen, *The Bassoon, its History, Construction, Makers, Players and Music*, Buren: Frits Knuf 1978, 5 vols.
Jeltsch, Prudent (1997)	Jean Jeltsch, "'Prudent à Paris', vie et carrière d'une maître faiseur d'instruments à vent", in: *Musique – Images – Instruments* 3 (1997), 128–152.
Kampmann (1986)	"Collection d'Instruments de Musique de Bruno Kampmann", in: *Larigot: Bulletin de l'Association des Collectionneurs d'Instruments à Vent, No. I Bis Spécial* (December 1986).
Kinsky, Heyer (ca. 1914)	Josef Focht (ed.), *Georg Kinskys Katalog der Blas- und Schlaginstrumente im Musikhistorischen Museum von Wilhelm Heyer in Köln*, [original typo- and manuscript ca. 1910–1926], Leipzig: Forschungsstelle Digital Organology am Musikinstrumentenmuseum der Universität Leipzig 2023 (access only online).
Kopp, The Bassoon (2012)	James B. Kopp, *The Bassoon*, New Haven and London: Yale University Press 2012.
Kuronen, Musical Instruments (2013)	Darcy Kuronen, *Musical Instruments*, Boston, MA: Museum of Fine Arts Boston 2013 (MFA Highlights); also as EPUB.

Langeveld, Tentoonstelling (1992)	Erik Langeveld, *Tentoonstelling van fagotten, prenten, boeken en manuscripten uit de collectie van Henk de Wit: tentoonstelling tijdens de Fagotdagen in De Ijsbreker te Amsterdam samengesteld door Erik Langeveld, 9–16 mei 1992*, Amsterdam: Muziekcentrum De Ijsbreker 1992.
Langwill, Bassoon (1948)	Lyndesay G. Langwill, *Bassoon & Double Bassoon: a Short History of their Origin, Development, and Makers*, London: Hinrichsen 1948.
Lasocki, New Light (2010)	David Lasocki, "New Light on Eighteenth-Century English Woodwind Makers from Newspaper Advertisements", in: *The Galpin Society Journal* 63 (2010), 73–142.
Lindstead, John Parr (1945)	Linstead, George F., "John Parr and His Concerts", in: *The Musical Times* 86 (1945), 169–172.
Made for Music (1986)	*Made for Music: An exhibition to mark the 40th anniversary of the Galpin Society for the study of musical instruments at Sotheby's Conduit Street Gallery, London WI, 11 to 23 Aug. 1986*, London: Sotheby's 1986.
Mahillon, Catalogue Bruxelles (1893/1978)	Victor-Charles Mahillon, *Catalogue descriptif et analytique du musée instrumental du conservatoire royal de Bruxelles*, Deuxième edition Gand: Ad. Hoste 1893; réedition Bruxelles: Les Amis de la Musique 1978, 5 vols. [first edition 1880].
Mandyczewski, Zusatz-Band (1912)	Eusebius Mandyczewski, *Zusatz-Band zur Geschichte der K. K. Gesellschaft der Musikfreunde in Wien: Sammlungen und Statuten*, Vienna: K. K. Gesellschaft der Musikfreunde 1912.
Marcuse, Musical Instruments (1964)	Sibyl Marcuse, *Musical instruments: a comprehensive dictionary*, Garden City, NY: Doubleday 1964.
Matei, Peculiarities (2001)	Corvin Matei, *Peculiarities and Anomalies of Intonation with special reference to the Construction and Evolution of Woodwind Instruments*, PhD University of Cape Town 2001.

Myers, Edinburgh Univ. Collection (1993)	Arnold Myers (ed.), *Historic musical instruments in the Edinburgh University Collection*, Vol. 2, fascicle ii: *Bassoons*, Edinburgh: Edinburgh University Collection of Historic Musical Instruments 1993.
Otto, MIM Berlin (1965)	Irmgard Otto, *Musikinstrumenten-Museum Berlin – Stiftung Preußischer Kulturbesitz, Staatliches Institut für Musikforschung. Ausstellungsverzeichnis*, Berlin: Staatliches Institut für Musikforschung 1965.
Pierre, La facture (1890)	Constant Pierre, *La facture instrumentale à l'Exposition de 1889: Notes d'un musicien sur les instruments à souffle humain nouveaux et perfectionnés*, Paris: Librairie de l'art indépendant 1890.
Rice, Four Centuries (2015)	Albert R. Rice, *Four Centuries of Musical Instruments: The Marlowe A. Sigal Collection*, Atglen, PA: Schiffer 2015.
Ridley, The Royal College (1982)	E. A. K. Ridley, *The Royal College of Music, Museum of Instruments:* Part I, *European Wind Instruments*, London: Royal College of Music 1982.
Seifers, Blasinstrumente München (1980)	Heinrich Seifers, *Katalog der Blasinstrumente* [im Deutschen Museum München], München: Deutsches Museum 1980.
von Steiger, Hirsbrunner (2016)	Adrian von Steiger, "Hirsbrunner, a Swiss Family of Wind Instrument Makers", in: *The Galpin Society Journal* 69 (2016), 166–167, 181–200.
Waterhouse, New Langwill (1993)	William Waterhouse, *The New Langwill Index*, London: Tony Bingham 1993.
Waterhouse, Proud Bassoon (1983)	William Waterhouse, *Proud Bassoon: Exhibition Showing the Development of the Bassoon over the Centuries*, Edinburgh: Edinburgh University Collection of Historic Musical Instruments 1983.
Young, Loan Exhibition (1988)	Phillip T. Young, *Loan Exhibition of Historical Double Reed Instruments,* Victoria: University of Victoria 1988.
Young, The Look of Music (1980)	Phillip T. Young, *The Look of Music*, Vancouver: Vancouver Museum and Planetarium Association 1980.
Young, 4900 Instruments (1993)	Phillip T. Young, *4900 Historical Woodwind Instruments*, London: Tony Bingham 1993.

Images of Selected Fagottini and Tenoroons

Donna Agrell

To conclude this volume, we would like to present readers with a number of images of selected small bassoons. In the course of their work, the Basel team had access to about sixty instruments. Various noteworthy details are shown here, including examples in full format, as well as striking features such as makers' stamps and key styles that characterise certain workshops or instrument models. It is clear that these instruments were built with the same care as the best full-sized bassoons and were therefore held in high esteem.

The locations of the fagottini presented here can be found in the instrument catalogue in this publication. Comprehensive documentation including additional photos, videos and measurement data can be found at the DaSCH and Zenodo repositories mentioned in the preface and instrument catalogue. We would like to thank the museums and private owners of the instruments for their access and for their permission to publish the photos.

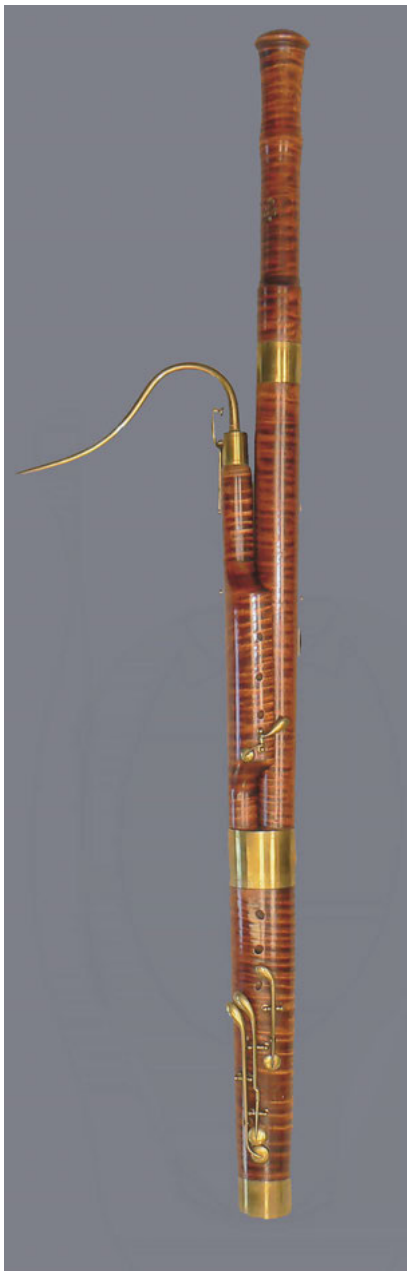

Fig. 1: FT2 13-key tenoroon, Adler. Photo: Vincenzo Onida.

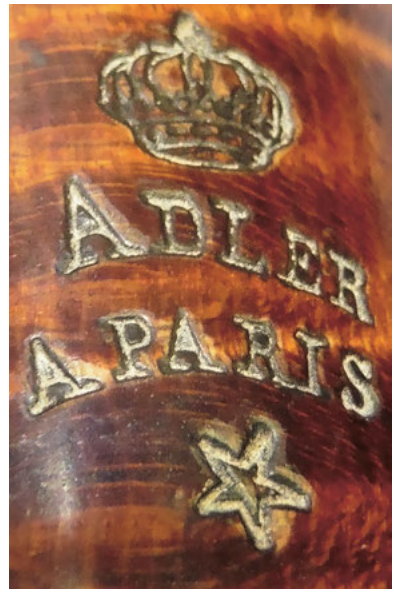

Fig. 2: FT2 13-key tenoroon, Adler, stamp. Photo: Vincenzo Onida.

Fig. 3: FT5 13-key tenoroon, Schubert, keyguard. Photo: Vincenzo Onida.

Fig. 4: FT6 8-key tenoroon, Anonymous 7. Photo: Vincenzo Onida.

Fig. 5: FT15 6-key fagottino, Grenser & Wiesner. Photo: Giovanni Battista Graziadio.

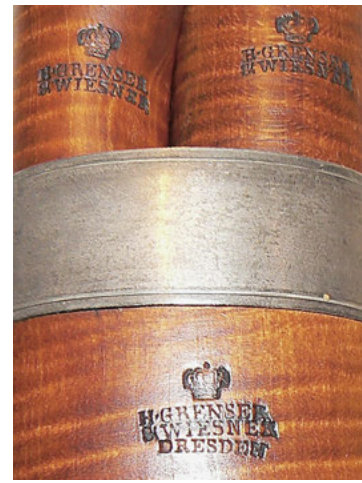

Fig. 6: FT15 6-key fagottino, Grenser & Wiesner, stamp. Photo: Giovanni Battista Graziadio.

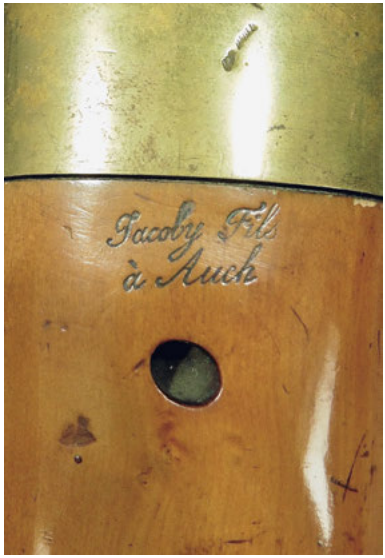

Fig. 7: FT17 5-key fagottino, Jacoby, stamp. Photo: Vincenzo Onida.

Fig. 8: FT18 4-key tenoroon, Kraus. Photo: Vincenzo Onida.

Fig. 9: FT19 8-key tenoroon, Merklein, stamp. Photo: Giovanni Battista Graziadio.

Fig. 10: FT25 14-key fagottino, Savary jeune, stamp. Photo: Vincenzo Onida.

Fig. 11: FT27 16-key tenoroon, Savary jeune. Photo: Vincenzo Onida.

Fig. 12: FT30 5-key fagottino, Scherer, key detail. Photo: Zoë Matthews-Visentin.

Fig. 13: FT30 5-key fagottino, Scherer. Photo: Zoë Matthews-Visentin.

Fig. 14: FT36 16-key tenoroon, Gautrot, key detail. Photo: Zoë Matthews-Visentin.

Fig. 15: FT42 11-key tenoroon, Savary jeune, stamp. Photo: Giovanni Battista Graziadio.

Fig. 16: FT43 7-key fagottino, Leiberz, key detail. Photo: Giovanni Battista Graziadio.

Fig. 17: FT45 12-key tenoroon, Stehle, stamp. Photo: Giovanni Battista Graziadio.

Fig. 18: FT46 5-key tenoroon, Anonymous 12. Photo: Giovanni Battista Graziadio.

Fig. 19: FT48 9-key tenoroon, Tauber, stamp. Photo: Giovanni Battista Graziadio.

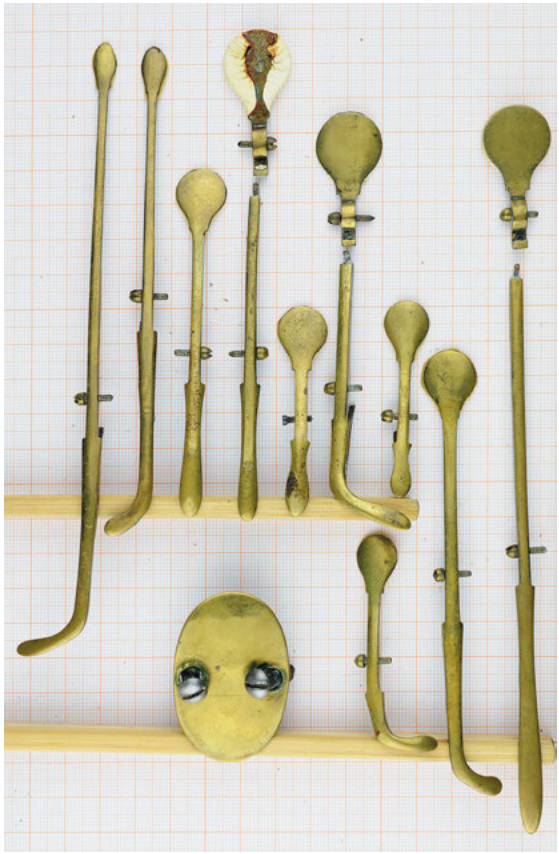

Fig. 20: FT49 10-key tenoroon, Küss, key set. Photo: Giovanni Battista Graziadio.

Fig. 21: FT56 7-key fagottino, Bühner & Keller, stamp. Photo: Áurea Domínguez.

Fig. 22: FT57 4-key tenoroon, Milhouse, stamp. Photo: Áurea Domínguez.

Abstracts and CVs

In alphabetical order of authors

Donna Agrell

Rediscovering Forgotten Relatives

A substantial number of small-sized bassoons were constructed in the 18th and 19th centuries, yet there are relatively few mentions of these instruments or indications found in musical scores. This perplexing discrepancy led a team in Basel to undertake comprehensive studies about small bassoons in two SNSF research projects at the Schola Cantorum Basiliensis FHNW, encompassing the documentation of surviving instruments, selected reconstructions, and historical research. Questions about how and where small bassoons were used can rarely be completely answered, and the most plausible hypothesis points towards a lost and largely undocumented performance practice.

A systematic approach to (re)evaluate bassoon repertoire is proposed, using the analysis of context and parameters such as range, tonalities, and transpositions. Several musical examples by composers such as Porpora, Telemann, and Beethoven are cited which specifically include small bassoons, or can be appropriately performed with them.

Notes About the Reconstructed and Printed Models

The second text briefly describes four instruments chosen to reconstruct, the materials used, and the processes involved. Several of the chosen models lacked matching bocals and additionally, no original reeds for small bassoons were located; new designs for these needed to be created and tested. The challenges that the research team encountered with pitch and flexibility of intonation are reported, along with technical information of interest to wind players.

CV

Performing and recording with some of the foremost orchestras and ensembles throughout her career, historical bassoonist Donna Agrell was a

founding member of the *Orchestra of the Eighteenth Century* (1981–2023), as well as principal bassoonist in the *Freiburger Barockorchester* (1989–2009). She taught historical bassoons and Harmoniemusik at the Royal Conservatoire in The Hague (1990–2023), and the Schola Cantorum Basiliensis FHNW (2001–2021), where she was also a senior member of two SNSF research project teams. Donna Agrell completed PhD studies at Leiden University in 2015, focusing on virtuosic nineteenth-century Swedish bassoon repertoire. A recording featuring some of these works was concurrently released ("A Bassoon in Stockholm", BIS 2141, 2016).

Áurea Domínguez

Bassoons Come in All Sizes: A Typology of Fagottini

Small-sized bassoons were made by the most reputable woodwind makers throughout Europe, such as Denner, Grenser, and Savary, among others. The historical metamorphosis in the construction of fagottino is closely linked to that of the full-sized bassoon. National peculiarities in construction came together with the development of at least three types of instruments tuned in different pitches: the fagottino, tuned an octave higher, and tenoroons tuned a fifth and fourth higher. Each of these transposing instruments inherited the character and role the bassoon played in different regions and times. This paper explores the history and types of small-sized bassoons from the early 18th century to the present, with organological descriptions of different models stemming from examinations of preserved instruments in museums and private collections.

CV

Áurea Dominguez is a researcher and performer specializing in historical double reed performance practice. Following her studies at the Schola Cantorum Basiliensis, where she was later employed as a researcher, she earned her PhD in musicology from the University of Helsinki in 2014. Her interests include historical sound technologies and innovative approaches to organology in wind instruments, such as the use of CT scans and 3D printing as research tools. Her monograph on nineteenth-century bassoon performance *Bassoon Playing in Perspective* (2013) has become an important reference in the field, as has her work on the fagottino and early recordings of wind music.

Thomas Drescher

Instrument Families and Small Bassoons in Michael Praetorius' *Syntagma Musicum* 1619

The small instruments of the bassoon family seem like lost (and rediscovered) relatives of an instrument family that was previously represented by only one single member. Yet the concept of "family" in the context of musical instruments is defined by quite precise criteria that were developed above all in the 16th century. The small bassoons of the 18th and 19th centuries fit into this scheme only to a limited extent. A look at other instrument families will show that analogous constellations can be found there, which can help to better understand the special functions of the small bassoons within a general development of instrument making.

CV

Thomas Drescher studied German literature and musicology in Munich and Basel. During his studies, he was already active as an ensemble singer and particularly as a string player (violin, viola and related instruments) in various early music ensembles. In 1989 he became a research associate at the Schola Cantorum Basiliensis, and in 1998 was also appointed deputy director of the institute. Thomas Drescher was director of the Schola Cantorum Basiliensis FHNW from 2016 to 2022 and has a Doctorate at the University of Basel on 17th century violin music. He was head of several SNSF research projects and other funding foundations at the SCB.

David Gasche

The Tenor Bassoon in the Context of Harmoniemusik, Turkish Music and Military Music

Several authors from Zedler (1731–1754) to Nemetz (1860) mention the fagottino or tenor bassoon, and recent studies by Hubmann (2011) and Kopp (2012) provide various theories about its function, but its exact musical use is still poorly documented. The author presents some reflections and comments on the use of the tenor bassoon in the repertoire of Harmoniemusik, outlining current research with a particular focus on the repertoire and instrumentation. A comparative analysis of contemporary sources sheds light on the use of the

tenor bassoon in this musical field. Finally, he attempts to explain some of the characteristics of the fagottino in the collection of the Gesellschaft der Musikfreunde in Vienna (I. N. 169).

CV

Born in Le Mans (France), David Gasche began his musical studies in Bayonne and continued at the Conservatoire and the University of Tours. He completed his doctorate in musicology (University of Vienna, 2009) and his artistic diploma in clarinet (Praner Conservatory, 2011). Several publications and lectures at international congresses represent his main areas of research, which relate to Harmoniemusik, gender in wind music and symphonic wind music. The Fritz Thelen Prize 2012 from the International Society for the Research and Promotion of Wind Music honoured his research in this area. David Gasche was a music teacher and choir director, and worked for the Collection of Early Musical Instruments at the Kunsthistorisches Museum in Vienna. Musical activities take up a large proportion of his time and he can be heard as a clarinettist and as a member of the *Pannonian Wind Orchestra* (PBO). He is currently Senior Scientist at the University of Music and Performing Arts Graz, Director of the International Centre for Wind Music Research, Secretary General of IGEB, and President of PBO.

Giovanni Battista Graziadio

Fagottino Players: Evidence of Historical Performance Practice in 18th- and 19th-Century Bassoon Repertoire

Recent musicological studies conducted about the history and organology of small-sized bassoons have brought forth testimonies of concerts, musical works including potpourris with adaptations of arias from operas, as well as music specifically composed for these small sized instruments. Various 19th century accounts mention accomplished bassoonists in Austria, Italy and France, who presented their abilities as instrumentalists and composers, or even as builders. It is noteworthy that they chose to play fagottino or tenoroon to impress their audiences with their versatility and virtuosity. All this offers new perspectives on historical performance practice.

CV

Giovanni Battista Graziadio performs concerts with many well-known European orchestras and ensembles, with which he has recorded numerous CDs on several international labels. He has taught performance practice, recorder, and historical bassoon in workshops at various state schools and international academies and currently teaches historical bassoon at the Conservatorio di Musica of Brescia (IT), at the Hochschule für Künste Bremen (DE), and at the Conservatorio di Musica di Benevento (IT). He was a member of the research team at the Schola Cantorum Basiliensis FHNW and is completing PhD studies at the University of Basel, where he is writing about "Use and Pedagogy of the Bassoon in Naples between the 17th and 18th centuries".

Klaus Hubmann

Reflections on the Origin, Distribution, and Repertoire of the High-Pitched Dulcian, Especially in the Northern Italian and German-Speaking Regions

The entries of three tenor and two discant (probably alto) dulcians in the inventory of the Graz court chapel of 1577 is one of the earliest records of small dulcians, following the mention of *bassoni curti* in an estimate from 1559 by Jacomo Bassano and his son-in-law Santo Griti da Sebenico for the "Piffari di Doge" in Venice. Although the first known scoring for dulcian in the tenor register, namely for a *basoncico* alias *fagotto piccolo* in the altus secondus chorus part, comes from the *Liber primus concentus in duos distinci* choros by Giovanni Pietro Flaccomio, a Venetian print from 1611, the use of these small instruments seems to have been centered mainly in Germany and the Habsburg lands throughout the 1600s. When the Nuremberg woodwind instrument maker Johann Christoph Denner built his first small, four-part bassoons based on the French model around 1700 or shortly before – an octave bassoon from his workshop is now in the Museum of Fine Arts in Boston – he was therefore able to draw on a tradition that was still alive.

CV

Klaus Hubmann studied bassoon, singing, musicology, the German language and literature in Graz and Vienna. He became lecturer (1986), university assistant (1987), then associate professor (2000), and from 2000–2005 and again between 2010–2020, head of the Institute for Early Music and Performance

Practice at the University of Music and Performing Arts in Graz. He is a member of the *Grazer Bläserquintett*, the *Austrian Art Ensemble* and the ensemble for contemporary music *szene instrumental*, as well founder and director of the Renaissance music ensemble *Catkanei – Studio für Alte Musik (Graz)*, the vocal ensemble *a più voci* and the *Harmonia antiqua*. Klaus Hubmann is the author of numerous publications about historical wind instruments and performance practice.

James Kopp

Small Bassoons by the Savarys: Context and Style

Jean-Nicolas Savary *jeune* (1781–1853) produced at least thirteen tenoroons and one octave bassoon, most of them dated between 1824 and 1843. This article examines the context of his oeuvre of small bassoons, the largest by a single maker before the twentieth century. Topics include his likely early collaboration with his father (Jean-Baptiste Savary *père*, 1751–1831) on one early tenoroon, his Medaille d'argent, his strenuous campaign of innovation and promotion, likely users of his small bassoons, his career as a bassoonist, and possible reasons for his declining output after 1843.

CV

James Kopp is the author of *The Bassoon* (Yale University Press, 2012) and two previous symposium papers on Savary jeune. His numerous published articles and reviews center on the history and acoustics of woodwind instruments. He contributed entries on the bassoon and many related topics to the *Grove Dictionary of Musical Instruments*, second edition (Oxford University Press, 2014) and the *Lexikon der Holzblasinstrumente* (Laaber Verlag, 2018). He is a performer on early and modern bassoons and contrabassoon, and a commercial maker of reeds for bassoon.

Zoë Matthews-Visentin

The Hamburg Link

Hamburg was an 18th century cultural hub attracting many composers, both resident and visiting, who exchanged ideas, theories and influences from across Europe. Keiser, Telemann and Mattheson all lived and worked in Ham-

burg at some point in their lives and their compositions provide significant evidence of the existence and use of small bassoons in and around the region. This article contextually and practically explores key repertoire for small bassoons linked to Hamburg, such as Mattheson's oratory *Das Große in dem Kleinen* (1722), Telemann's cantatas *Abscheuliche Tiefe des grossen Verderbens* (1731–1732) and *Mit Gott im Gnaden-Bunde stehn* (ca. 1725) and Zachow's Easter cantata No. X, *Dies ist der Tag* (ca. 1700).

CV

The British bassoonist Zoë Matthews-Visentin performs throughout Europe with ensembles such as *La Scintilla*, *Kammerochester Basel*, *Les Talens Lyriques*, *Orchestra of the Age of Enlightenment*, *Les Siecles*, and the *Early Opera Company*. She recorded Bach Motets with *VOCES 8* on the "Signum Classics" label and played in several live broadcasts for BBC Radio 3. She teaches modern and historical bassoons in Switzerland at the Regio Musikschule (Sissach) and the Hünenberg Musikschule (Zug), as well as privately.

A member of two SNSF research teams about small bassoons, her primary focus was directed on repertoire evaluation and research, as well as pedagogical applications. She has a Master of Music degree from the Royal Northern College of Music and Master of Music and Pedagogy degrees from the Schola Cantorum Basiliensis FHNW.

Vincenzo Onida

New Tools in the Making of Historical Woodwind Copies

Recent research about the historical fagottino gave access to innovative tomographic scanning, 3D printing technology and the subsequent processing of the data for the construction of the tools to reconstruct instruments, achieving a hitherto unheard-of precision and adherence to the original measurements.

The work in the laboratory dealt with the encounter between the extraordinarily high definition of measurements and the indispensable simplification – necessary for handcrafted work – which must measure itself against the requirements of wood, which itself has extreme variables. The experience made with the reconstructions for the "Out of the bass register" research project, described here, reached innovative milestones of great interest.

CV

Born in Milan, Vincenzo Onida studied Renaissance and Baroque bassoon in Geneva with Lorenzo Alpert and in Milan with Alberto Grazzi, and graduated from the Brera Academy of Fine Arts (Milan). He has played in Italy and abroad, and is a member of chamber ensembles specialising in 17th century repertoire for dulcian (*Gruppo 600*, *Quoniam*, *The Italian Consort*), participating in concerts and recordings.

Vincenzo Onida is active in the construction and restoration of historical woodwinds for both private collectors and public institutions, participating in international trade fairs (Paris, Brussels). In the field of wood restoration, he has held professional courses and is a consultant for the conservation and aspects of restoration of the historical wind instrument collections for the conservatories of Parma and Naples, for which he restored a rare Tauber contrabassoon. As an external partner to both SNSF research projects at the Schola Cantorum Basiliensis FHNW about small-sized bassoons, Vincenzo Onida built reconstructions, and acted as an adviser for instrument data collection and evaluation, as well as photographer.

Ricardo Simian

Coming Full Circle: Using Digital Technologies in the Fagottini and Tenoroons Research Projects

Between 2017 and 2023 three research projects were carried out by a team at the Schola Cantorum Basiliensis, aiming at reaching a better understanding of the small-sized bassoons from the eighteenth and nineteenth centuries. The research was undertaken by a multidisciplinary team with the goal of using their tools and techniques in a complementary manner.

The paper provides an overview of the research method in general and describes the use and involvement of digital technologies in detail. In particular, the innovative integration of advanced 3D modelling, additive manufacturing, and digital fabrication of traditional tools will be presented in depth, as well as the new types of research questions they allow us to tackle.

CV

The quest for exploring different areas, ranging from arts to technical innovation, has taken Ricardo Simian from Chile to Italy, to Switzerland and finally

to Norway, collecting degrees in music performance, cultural management, and Early Music on the way.

All of these fields merge together in his main project, an ongoing PhD research on Design and 3D-print at the Architecture and Design School of Oslo (AHO). This research builds upon Ricardo Simian's award-winning startup 3D Music Instruments, which operates at the cross section between 3D-print technology, music, design and innovation (www.3dmusicinstruments.com).

Letizia Viola

Pedagogical Applications of the Historical Fagottino: A Report from the Classroom

At the beginning of the 1990s, small modern instruments were developed that were specifically tailored to the requirements of children, thus enabling an early introduction to the world of the bassoon. This led to an upsurge of pedagogy in the context of the modern bassoon, but not in the field of historical instruments. The use of small historical bassoons in pedagogy allows children to work with a historical instrument from the very beginning and give rises to a new generation of bassoonists – those who have not previously played modern bassoon or recorder, as has often been the case in the past, but who are exposed to the characteristics of the historical bassoon from the very beginning.

CV

The Sicilian bassoonist Letizia Viola lives in Basel and teaches historical bassoon at the Hochschule für Musik Trossingen and the Music School of the Schola Cantorum Basiliensis, as well as modern bassoon at the Music School of the Musik-Akademie Basel. She was an academy member of the *Berlin Philharmonic Orchestra* and deputy solo bassoonist of the *Bremen Philharmonic Orchestra* from 2002 to 2017. From 2017 to 2023, she was a member of the research team in two SNSF projects focusing on small-sized bassoons at the Schola Cantorum Basiliensis FHNW. Furthermore, she regularly performs with ensembles such as *La Cetra*, *Freiburger Barockorchester*, *Kammerorchester Basel*, *Die Freitagsakademie*, *Il Pomodoro*, and *La Scintilla*.

Schwabe Verlag's signet was Johannes Petri's printer's mark. His printing workshop was established in Basel in 1488 and was the origin of today's Schwabe Verlag. The signet refers back to the beginnings of the printing press, and originated in the entourage of Hans Holbein. It illustrates a verse of Jeremiah 23:29: 'Is not my word like fire, says the Lord, and like a hammer that breaks a rock in pieces?'

BASLER BEITRÄGE ZUR HISTORISCHEN MUSIKPRAXIS

Herausgegeben von Martin Kirnbauer

Fagottini and Tenoroons

Small-Sized Bassoons from the 18th and 19th Centuries

A surprising number of small-sized bassoons from the 18th and 19th centuries have recently come to light. A research team at the Schola Cantorum Basiliensis was able to identify over 130 of these instruments, which are meticulously documented in the catalogue in this volume. The accompanying articles examine their history, describe the reconstruction of playable copies using modern scanning and 3D-printing technology, and suggest an important pedagogical role. Collectively they indicate a history of diverse use that is only partially reflected in surviving sources, while demonstrating that replicas have a valuable role in re-introducing a unique instrumental colour to historically informed musical performance.

The three editors are closely associated with the Schola Cantorum Basiliensis. **Donna Agrell** was professor of historical bassoon and is an active player and scholar, **Thomas Drescher**, as former director of the SCB, has conducted various research projects on instrument-related topics, and **Martin Kirnbauer** is the current head of the research department and an expert on historical woodwind instruments.

The *Basler Beiträge zur Historischen Musikpraxis* is a continuation of the *Basler Jahrbuch für Historische Musikpraxis*, published since 1977 by the Schola Cantorum Basiliensis/FHNW. Each volume presents key topics from the work fields and research projects of the Schola Cantorum Basiliensis, documenting the scholarly debate on historical music practice.

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