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Scientific bachelor thesis

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The History of the Oboe: The Development of the Instrument and Its Role in Music from the Baroque to the Present.

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1. Introduction

1.1 Subject of the research

The focus of this research is on the history of the oboe, a woodwind instrument with a double-reed. The main purpose of this study is an analysis of the historical development of this instrument and the evolution of its role in music. Chronologically, the research covers the period from the precursors of the oboe, through the Baroque, Classical and Romantic eras to the present day.
The development of the instrument will be discussed in detail, including changes in the construction of the body, the development of the flap mechanics and the standardisation of different flap systems, such as those developed by the Triébert family or discussions related to the Böhm system. Key instrument makers will be presented, as well as related instruments that developed in parallel or derived from the oboe, such as the english horn and oboe d'amore.

In the context of the oboe's role in music, the research will examine its use in various types of compositional forms, including in orchestral music, chamber music and as a solo instrument. A selection of repertoire specific to particular eras will be presented, as well as profiles of outstanding oboists, virtuosos and pedagogues who have contributed to the popularisation of the instrument and the development of performance techniques. Aspects of performance practice specific to different historical periods and traditions will also be discussed.
The research's scope therefore covers both the constructional aspects of the instrument and the musicological aspects – repertoire, performance, and the instrument's role in the arts over the centuries. The aim is to provide a comprehensive overview of the evolution of the oboe and its significance in music.

1.2 What is an oboe?

The oboe, a woodwind instrument, belongs to the double-reed family of instruments. Modern examples of the oboe are usually constructed of a slender tube made of hard, dense wood, although metal or ebonite instruments are occasionally seen. A typical oboe construction consists of three parts, joined by tenon and socket joints. A distinctive structural characteristic of the oboe is its acoustic canal, which is described as narrow and conoidal, extending progressively for about five-sixths of its length and then more abruptly to form a moderate bell[1].

The production of the sound in the oboe is initiated and maintained by a vibration exciter element. In the case of the oboe, this element is the double-reed, which is inserted into the top part of the instrument. The function of the resonator here is performed by the oboe – its body and, in fact, the column of air that forms in the body of the instrument resonates. The two roles of generator and resonator are closely linked and make the instrument play[2].
The timbre of the oboe sound is defined by specific characteristics. Descriptions of this timbre in musical literature are varied and change according to the stage of development of the instrument. For example, C. L. Junker, in his Musikalischer Almanach of 1782, described the oboe as an instrument suitable for expressing “soft, tender and mildly sad feelings”[3]. Richard Strauss, on the other hand, in his amplification of Berlioz's Instrumentation (1904), comparing the French and German oboe, described the German sound as “thick and trumpet-like”, to the disadvantage of the German oboe, which led to the production of the French version in Germany[4].

The technique of playing the oboe is now highly developed and complex. This instrument requires extensive technical skills from the player. It is illustrated by numerous examples of concertos and etudes written for the instrument, such as

[1] Cf. Bate 1956, p. 1.
[2] Cf. Bate 1956, p. 108.
[3] Cf. Carse 1965, p. 132.
[4] Cf. Carse 1965, p. 141.

the Concertino for Oboe and Orchestra, Op. 110, written by the violinist Johann Wenzeslaus Kalliwoda, in which, in the solo part, at one point the oboist has to play a g''' sound, which is technically demanding[5]. Contemporary performance techniques also include more complex sound effects such as multiphonics. For example, there are extensive compilations of notation for oboe multiphonics, offering hundreds of different fingering and variants depending on air pressure and blowing[6].

2. The origins and precursors of the oboe

2.1 Wind instruments with double-reed prior to the oboe

The development of the oboe in its modern form was preceded by a rich history of wind instruments using double-reeds made from the cane[7]. An analysis of the sources indicates that these instruments, although different in construction and sound production, formed the foundation on which the later Baroque oboe was shaped, deriving primarily from the shawm[8].

Early double-reed wind instruments can be classified according to several criteria, including the shape of the bore (conical or cylindrical) and how the reed is controlled by the player. Some were characterised by a reed in the air chamber, while others allowed direct control of the reed through the mouth[9]. One of the important groups of instruments that preceded the oboe were pommers. Praetorius, in his works, lists them as a type of shawm and gives their equivalents in various languages[10]. These instruments had a simple conical bore and had lipped reed[11]. Early pommers, including bass and gross bass ones, had significant sizes, making them difficult to carry, although attempts were made to make

[5] Cf. Joppig 1988, p. 150.
[6] Cf. Burgess/Haynes 2004, p. 274-275.
[7] Cf. Carse 1965, p. 8.
[8] Cf. Carse 1965, p. 127-128.
[9] Cf. Carse 1965, p. 8.
[10] Cf. Bate 1956, p. 26.
[11] Cf. Bate 1956, p. 27.

them more portable[12]. Bass pommers, according to some tests, showed surprisingly good intonation when cross fingering accidentals, and their tone was free and pleasant[13]. The instruments historically referred to as oboe da caccia, tenor hautboy, taille or tenor oboe, pitched an octave lower than the oboe, can be seen as the continuation of the pommer's family[14].

Another group of instruments were krumhorns, which, according to the classification, had a conical or cylindrical bore and used a reed in an air chamber or pirouette[15]. Praetorius also included krumhorns in his lists of double reed wind instruments[16]. These instruments were characterised by a doubled cylindrical bore, which made them different to play[17]. Krumhorns were commonly used in wind ensembles in the late Middle Ages, but by the end of the 17th century their popularity had declined significantly, and by the 18th century they were seen mainly as historical instruments[18].

Dulcian, is a double reeded wind instrument characterised by a conical bore in which the reed was controlled directly by the player's lips. Sources say dulcians are an early form of bassoon[19].

Another instrument with a doubled cylindrical conductor, described by Praetorius, was the sordun[20]. Sordun groups included instruments in registers ranging from great bass to quint or quart bass, bass to tenor[21].

Racketts are another group of double-reed wind instruments with doubled cylindrical bore, nine times folded. They were known by various names such as Rackett, Ranket, Sausage Bassoon, Wurstfagott or Faustfagott[22].

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[12] Cf. Bate 1956, p. 33.
[13] Cf. Bate 1956, p. 36.
[14] Cf. Joppig 1988, p. 108.
[15] Cf. Carse 1965, p. 8.
[16] Cf. Bate 1956, p. 26.
[17] Cf. Bate 1956, p. 27.
[18] Cf. Carse 1965, p. 127-128.
[19] Cf. Carse 1965, p. 8.
[20] Cf. Bate 1956, p. 27.
[21] Cf. Joppig 1988, p. 40.
[22] Cf. Bate 1956, p. 26-27.

Schreierpfeifen, mentioned by Praetorius, were said to be even louder than pommers. These instruments, like pommers, were built in different sizes: bass, tenor/alto and cantus (treble)[23].

The Rauschpfeife is an instrument that Sachs identified as a type of shawm. According to the author, the name rauschpfeife appears only once in the context of Burgkmair's famous series of woodcuts Kayser Maximilians I Triumph from around 1516[24].

There are many more of these instruments, and their variety shows the diversity of the constructional and sonic experiments that preceded the development of the oboe in its more familiar form. The nomenclature of these instruments was often variable and could refer to different types of instruments depending on the era and region, as highlighted by the differences in descriptions and names in the sources[25].

2.2 Evolution from shawm to the Baroque oboe

The evolution of woodwind instruments represents a complex historical process, in which the shawm played a key role as the direct precursor of the baroque oboe[26]. The period of the transformation of the shawm to the oboe probably falls in the second half of the 17th century[27].

The terminology for instruments with double-reeds has historically been inconsistent, making it difficult to distinguish precisely between earlier shawms and later oboes. In Germany, names such as Schalmei, Schalmey, Schalemie, Schalemeye, Pommer, Bomhard, Bombart, Bomhardt, Bombardt or Pumhart were used. In France, the terms Haulxbois, Bombarde, Chalamie, Chalumeau, Calemelle, Chalemel, Chalemie, as well as Hautbois were encountered. Italian

[23] Cf. Joppig 1988, p. 45-46.
[24] Cf. Carse 1965, p. 128.
[25] Cf. Bate 1956, p. 26-27.
[26] Cf. Burgess/Haynes 2004, p. 26.
[27] Cf. Joppig 1988, p. 63.

equivalents are Piffero, Bombardo, Bombardone, Bombardino[28]. The English name Shawm was used interchangeably with Waits[29]. It should be noted that the use of the form of the French word Hautbois alone does not necessarily distinguish an earlier type of instrument from a later one[30].

Michael Praetorius is one of the most important authors describing double-reed instruments in the early 17th century[31]. He lists Hautbois as French, Waits as English, Piffero as Italian and Bombart as the German equivalent of Pommer[32]. The earliest known illustration of a shawm dates from the early 14th century (Sloane MS. 3908 in the British Museum), while the earliest written description of the instrument was provided by Johannes Tinctoris around 1486[33].

The design of the shawm was characterized by a straight conical conductor and a lipped reed[34]. The instruments, from the tenor downwards, were equipped with crooks and all are sounded with a pirouette[35]. The pirouette, a hollow element, was a distinctive feature of the sagebrush and differed from the solutions used in the oboe. Sources suggest, however, that for very long bass and gross bass pommers (respectively about 244 cm long and about 304 cm), the pirouette may not have been used[36]. Praetorius described a family of shawms including instruments from the high treble to the double bass, representing one of the first instances of such a complete evolution of a family of wind instruments in Europe[37].

The tonal qualities of the shawm have sometimes been described as “pleasing harmony”, although later historical interpretations have seen such terms as derogatory, even though they were originally intended to praise the sonic power of the instrument[38]. It has been used in a variety of musical contexts. It was used at the courts, as evidenced by records of the purchase of “bombardes a clef” and

[28] Cf. Carse 1965, p. 120.
[29] Cf. Bate 1956, p. 26.
[30] Cf. Carse 1965, p. 120.
[31] Cf. Bate 1956, p. 25.
[32] Cf. Bate 1956, p. 26.
[33] Cf. Bate 1956, p. 25, 28.
[34] Cf. Bate 1956, p. 27.
[35] Cf. Carse 1965, p. 125.
[36] Cf. Bate 1956, p. 32-33.
[37] Cf. Bate 1956, p. 28.
[38] Cf. Burgess/Haynes 2004, p. 18.

“teneurs a clef” at the court of Burgundy in the 15th century[39]. Historical records also indicate the use of shawms during ceremonial public proclamations in the 16th century[40].

The transformation of the shawm to the Baroque oboe was not sudden, but was an evolving process that can be seen as a “punctuated equilibrium”, resulting from adaptation to changing historical contexts[41]. A key element of this transformation was the move away from pirouette towards a technique of holding the reed between the lips, allowing greater control over tone and intonation. Transitional forms of instruments, such as the treble “haut-bois” described by Mersenne, seem to announce the change to come. This instrument had no pirouette, suggesting that the reed was held directly between the lips. It had eight finger-holes and probably two pairs of tuning-holes, and its external appearance resembled a later type of oboe, which may indicate the beginning of the transformation of the shawm into an oboe. This transitional period laid the foundations for the development of the Baroque oboe, and the commonly accepted theory is that the modern oboe was born in France[42].

3. Baroque oboe

3.1 Technical and sonic characteristics of the Baroque oboe

The Baroque oboe typically comprised three distinct sections, contrasting with the one-part body of its predecessor, the shawm[43]. These sections were united by tenon and socket joints. The materials employed for the instrument's body commonly included boxwood or fruitwood[44]. However examples made of other woods are also found in historical collections[45]. Decoration often took the form of turnery

[39] Cf. Bate 1956, p. 25.
[40] Cf. Bate 1956, p. 36.
[41] Cf. Burgess/Haynes 2004, p. 2.
[42] Cf. Carse 1965, p. 125.
[43] Cf. Joppig 1988, p. 52.
[44] Cf. Page et al. 2001.
[45] Cf. Bate 1956, p. 131.

on the joints[46]. The bore dimensions of these early instruments were generally substantial when compared to modern standards[47]. Early instruments typically featured a limited number of keys. The finger-hole configuration of the Baroque oboe featured eight holes, six under the control of the fingers, and keys for c′ and E flat. Additional holes and keys for chromatic notes were added later during the 19th century[48]. A characteristic feature of early 18th century oboes was a pair of turned rings on the bell-joint, with later instruments featuring only one ring above the tuning holes[49].

Central to the sound production of the Baroque oboe was the double-reed, which was crafted from thin blades of cane, specifically the semi-tropical grass Arundo donax or Arundo sativa. These blades were bound face-to-face with thread onto a narrow, tapered metal tube known as a staple[50]. Unlike the shawm, where the reed was enclosed within a pirouette, the double reed of the oboe was placed directly between the player's lips[51]. The player, in order to produce a sound, puts the reed in his mouth, gently blows into it, which causes the blades of the reed to start vibrating. The successful management of this delicate apparatus constituted perhaps the most challenging aspect of oboe technique for a beginner to master[52]. 18th century oboes generally employed a reed that was wider than those used on modern instruments, while reeds became narrower in the 19th century[53].

C. L. Junker in his Musikalischer Almanach of 1782, posited that the Baroque oboe was suitable for expressing “soft, tender and mildly sad feelings”. 18th century tutors suggest that the tone of the oboe, played with a broader reed, was likely heavier than that of a modern instrument, yet there is no indication that it was coarse or strident as is sometimes stated[54].

Achieving precise tuning and intonation on the Baroque oboe involved specific techniques and instrument features. Early players' ability to adjust pitch by blow-

[46] Cf. Page et al. 2001.
[47] Cf. Bate 1956, p. 43.
[48] Cf. Page et al. 2001.
[49] Cf. Carse 1965, p. 131.
[50] Cf. Page et al. 2001.
[51] Cf. Joppig 1988, p. 52.
[52] Cf. Bate 1956, p. 2.
[53] Cf. Page et al. 2001.
[54] Cf. Carse 1965, p. 132.

ing sharper or flatter depended on the reed and their embouchure[55]. Notes outside the basic scale were obtained through the use of 'resistance fingerings' - cross- or forked fingerings[56]. To accommodate the varying pitches prevalent during the period, oboes were sometimes provided with interchangeable upper-pieces[57]. Dynamics and articulation also played a significant role, with articulation being achieved by stopping the vibration of the reed, typically by touching it with the tongue[58]. The Baroque oboe also utilized techniques such as flattement, or finger vibrato, which differs from the breath vibrato commonly used by modern players[59].

3.2 Related instruments

3.2.1 Oboe d'amore

A notable addition to the oboe family during the 18th century was the oboe d'amore. This mezzo-soprano oboe is pitched in A, a minor third below the standard oboe, and is distinguished by its bulb-shaped bell. The oboe d'amore was developed in south-central Germany, specifically appearing about 1719. Its tonal quality was characterized as being “more sombre than the treble oboe, but less heavy than the tenor”. Composers such as J.S. Bach, Telemann, and their contemporaries exploited the unique timbre of the oboe d'amore, employing it as both a solo and obbligato instrument[60].

[55] Cf. Bate 1956, p. 47.
[56] Cf. Page et al. 2001.
[57] Cf. Carse 1965, p. 131.
[58] Cf. Burgess/Haynes 2004, p. 258.
[59] Cf. Page et al. 2001.
[60] Cf. Page et al. 2001.

3.2.2 English horn

The english horn, also referred to as the cor anglais, is a tenor oboe typically pitched in F, placing it a fifth below the standard oboe in C. The instrument is known by various names across different languages, including cor anglais in French, englisches Horn or Englischhorn in German, and corno inglese in Italian. Historical variants in the 18th century included hautbois anglois and cor de chasse anglais in French, and englische Wald[h]oboe and englisches Waldhorn in German. Physically, the english horn features a conical bore and is larger than the oboe. A characteristic feature is its bulb-shaped bell[61]. Historically, the english horn developed from earlier oboes, tracing its lineage back to the alto shawm – pommer or bombard[62]. It is believed to have emerged shortly after 1720, possibly through the addition of a bulb bell to an oboe da caccia body[63]. The english horn is particularly noted for its distinctive tone quality, which is often described as melancholic or lugubrious. Around 1785, C. F. D. Schubart commented that its sound was considered exquisitely suited for conveying feelings of despondency and profound melancholy[64]. The famous composer Hector Berlioz characterized its sound as creating “feelings of absence, of forgetfulness, of sorrowful loneliness”. By the beginning of the 20th century, the English horn was firmly established as a recognized solo voice within the orchestral setting[65].

[61] Cf. Page et al. 2001.
[62] Cf. Carse 1965, p. 142.
[63] Cf. Page et al. 2001.
[64] Cf. Burgess/Haynes 2004, p. 217.
[65] Cf. Page et al. 2001.

3.3 The role of the oboe in baroque music

The oboe in the baroque orchestra was often employed as a ripieno instrument, frequently paired with strings and contributing a notable “pungency” to the texture. The works of Johann Sebastian Bach, for instance, include numerous examples where the oboe doubles string parts. At that time, according to Quantz, the orchestra would consist of two oboes[66].

Beyond its orchestral function, the oboe played a role in Baroque chamber music. Early examples from the 1690s include chamber music designed “en symphonie”, meaning it was suitable for performance on any treble instrument or combination thereof. Trios composed during this decade by figures such as François Couperin, Marin Marais, and Jean-Féry Rebel exemplify this practice[67].

The solo capabilities of the oboe also began to be explored during the Baroque period. The earliest instances of the instrument being used in a soloistic capacity can be found in the form of obbligato parts in opera arias, written by composers like Agostino Steffani, Johann Kusser, and Reinhard Keiser. These represent the initial solo uses of the instrument[68]. The 18th century is considered the oboe's “Golden Age of repertoire”, with a large number of chamber pieces and solos surviving from this time, reflecting the instrument's standing and utility. Michel de La Barre, a French court composer and woodwind player, published first solo suites and trios with continuo in the early 18th century, originally for traverso, in later edition to include other instruments, such as oboe. They are considered some of the best solos to appear in the 18th century[69]. During the late Baroque period in Germany, the oboe d'amore, the related instrument to oboe, also gathered considerable attention. Composers were drawn to its distinctive tone, leading to a wealth of solo, concertante, obbligato, and chamber music being created for it. Com-

[66] Cf. Bate 1956, p. 39-40.
[67] Cf. Page et al. 2001.
[68] Cf. Page et al. 2001.
[69] Cf. Burgess/Haynes 2004, p. 62.

posers like Telemann contributed solo concertos and obbligato parts for the oboe d'amore in both sacred and theatrical vocal works[70].

In terms of performers, while specific names of universally celebrated Baroque oboists are less extensively documented in sources compared to later periods or other instrument families, their existence and influence are evident. French musicians were appointed to German courts, spreading the influence of the French-developed instrument[71]. Players such as J.C. Gleditsch, who collaborated with Kuhnau and Bach, and J.M. Böhm, who worked with Telemann, were significant figures associated with the oboe d'amore repertoire[72]. The arrival of the oboe in England is linked to the Frenchman Paisible and his colleagues[73].

4. The oboe in the Classical era

4.1 Evolution of the instrument's construction

The period commonly identified as the Classical era witnessed a notable transformation in the design and characteristics of the oboe, marking a distinct evolution from its Baroque predecessor. The new model was a response to new musical challenges to achieve greater possibilities[74].

A fundamental difference lay in the dimensions of the bore and the size of the tone-holes. The Baroque oboe typically featured a bore that was larger when measured against the evolved version. The Classical oboe developed a smaller bore and tone-holes, representing a significant departure from the previous construction[75]. This modification in internal dimensions, coupled with smaller tone-holes, had direct implications for the instrument's acoustic properties. These changes influenced the overall character and response of the instrument, leading

[70] Cf. Page et al. 2001.
[71] Cf. Joppig 1988, p. 52, 54.
[72] Cf. Page et al. 2001.
[73] Cf. Bate 1956, p. 39.
[74] Cf. Burgess/Haynes 2004, p. 85.
[75] Cf. Haynes 1992, p. 43.

to a tonal quality described as possessing a gentleness and transparency. The shift in tonal ideal also necessitated a change in reed design; the smaller tone-holes of the Classical oboe were better suited to a softer and more flexible reed than that used on the Baroque instrument[76]. Generally, reeds became narrower and shorter as the 18th century progressed, correlating with the reduction in bore size and the upward trend in pitch[77]. The elaborate ornamentation and turnery, such as the baluster and heavy rings prominent on earlier Baroque oboes, were often reduced or simplified, prioritizing functionality over aesthetic flourishes around 1750[78]. Additional keys, such as those for c' sharp and an octave key, began to appear more consistently towards the latter part of the 18th century[79]. The introduction of keys was spurred not primarily by the desire for advanced pure technique, but rather to adapt the instrument to the technical demands of music, particularly concerning navigating challenging passages and improving response[80]. Moreover, the approach to fingering underwent a transformation. The technique on the baroque oboe relied heavily on cross-fingerings and half-holing to produce chromatic notes and manage intonation. The Classical period saw these traditional techniques being questioned as composers demanded greater chromatic facility and evenness across the range. Consequently, the development moved towards adding separate tone-holes for every note, which were then opened by keys[81]. However some cross-fingerings persisted, often used for alternative fingerings or specific effects[82]. The elimination of certain duplicate finger-holes, such as the double e' flat on the Classical oboe also suggests the standardization of hand positions, with the left hand placed above the right becoming the norm[83].

[76] Cf. Haynes 1992, p. 59.
[77] Cf. Burgess/Haynes 2004, p. 157, 159.
[78] Cf. Bate 1956, p. 45.
[79] Cf. Haynes 1992, p. 62.
[80] Cf. Haynes 1992, p. 48.
[81] Cf. Bate 1956, p. 119.
[82] Cf. Page et al. 2001.
[83] Cf. Haynes 1992, p. 48.

4.2 The role of the oboe in the Classical era

The transition from the Baroque to the pre-Classical period, which occurred during the 18th century, marked the emergence of a distinct orchestral formation that would serve as the foundation for both the Classical and subsequent Romantic styles. Within this developing orchestral structure, the oboe assumed a significant and evolving role in orchestral, chamber, and solo repertoire. From the outset of this new orchestral paradigm, a pair of oboes typically complemented the string section and a pair of horns. The concept of the harmonieinstrument, referring to instruments primarily used for filling out harmonies, appears to have originated during this era. In early Classical symphonies, the two oboes, alongside the two horns, were frequently tasked with sustaining chords. Furthermore, composers allotted brief solo passages to the oboes, often crafted to emulate the string parts, which were often not easy to play. It is posited that composers would likely not have written so many solo lines for the oboe if it were perceived as a crude or shrill-sounding instrument, or if it were played by musicians lacking skill or proper training. The frequent alternation of string passages with solos for the first oboe in works such as Mozart's Symphony in A major, K 201, further demonstrates that players of the time possessed the capability to execute these parts accurately, even in the upper register, on instruments generally equipped with only the two keys for c' and d' sharp[84].

While orchestral music was a primary domain for the oboe in the Classical era, it also featured in chamber music. One notable example is Mozart's Oboe Quartet. The sources also mention quartets by Joseph Fiala. Both in these work oboist has to play a f''' note[85].

The repertoire for the oboe as a solo instrument during the Classical era reflects the skill and musicality of the oboists of the time. Johann Wenzeslaus Kalliwoda (1801-1866), a violinist, also composed a virtuoso Concertino for Oboe and Orchestra, Op. 110, which extensively explored the instrument's capabilities, reach-

[84] Cf. Joppig 1988, p. 134-135.
[85] Cf. Joppig 1988, p. 81, 84.

ing a note g''' that was exceptional for the time, though included in contemporary French studies[86]. Wolfgang Amadeus Mozart (1756-1791) was a central figure of the Classical era, in relation to the oboe, who composed significant works that reflect the instrument's capabilities and the skill of contemporary performers. Among these, the Oboe Concerto stands out as a piece of considerable historical and pedagogical importance. The historical circumstances surrounding Mozart's Oboe Concerto, particularly catalogued as K 314, present a degree of ambiguity for musicologists. The surviving manuscript situation for K 314 has contributed to its complex history. An extant copy exists in D major, which has led to the work being shared with flautists. However, the rediscovery of a fragment in Mozart's own hand has clarified that the original key was C major[87]. Critically, proficiency in performing this concerto faultlessly is considered a requirement for oboists auditioning for orchestral positions. Thus, Mozart's Oboe Concerto, while subject to historical complexities, serves as a cornerstone of oboe training and performance practice in the modern era[88].

Professional musicians during this period often originated from the middle and lower classes. They frequently depended on court positions, although even in places affected by revolution, their livelihoods relied on patronage[89]. Secchi, the principal oboist in Munich in 1775, is referenced as the likely player for whom Mozart wrote certain oboe solos[90].

[86] Cf. Joppig 1988, p. 150.
[87] Cf. Joppig 1988, p. 145.
[88] Cf. Joppig 1988, p. 147.
[89] Cf. Burgess/Haynes 2004, p. 128.
[90] Cf. Haynes 1992, p. 60.

5. The oboe in the 19th century

5.1 Evolution of the mechanics and flap systems

The trajectory of the oboe underwent a profound transformation during the 19th century, diverging significantly from its antecedent, the 18th century oboe[91]. This developmental stage transitioned from empirical modifications to a more structured evolution, propelled by skilled artisans and virtuosic performers responding to increasingly demanding musical contexts[92].

Several fundamental aspects of the oboe's construction and mechanism were altered throughout the 1800s. By the mid-19th century, makers began exploring alternative woods such as rosewood and grenadilla to provide a more stable foundation for the increasingly intricate key systems[93]. While the bore was slightly narrowed at the upper end in the early 19th century, many 18th century characteristics like the external profile and internal incurve at the bell-end were retained for a time[94]. The most striking area of evolution was the keywork. The demands of new musical styles and the economic feasibility offered by the Industrial Revolution spurred the addition of keywork[95]. Among the initial mechanical augmentations were an octave key, a closed G sharp key for the left little finger, a closed F sharp key for the right little finger to improve intonation, and a closed key for the previously difficult low C sharp. The addition of the low C sharp key led to the eventual obsolescence of the old swallow-tail key. Subsequent key additions included a closed cross-key for F natural and a closed B flat key, which was sometimes operated by the left thumb but later assigned to the right first finger. A closed key for the upper C natural was also added, often controlled by the right first finger. A significant addition in the first quarter of the 19th century was a long-shanked open key positioned on the bell-joint, which previously housed a tuning-hole. Closing this key allowed the instrument to sound a low B natural through the

[91] Cf. Page et al. 2001.
[92] Cf. Bate 1956, p. 52.
[93] Cf. Page et al. 2001.
[94] Cf. Carse 1965, p. 136.
[95] Cf. Page et al. 2001.

bell, extending the oboe's downward range by a semitone. The implementation of this key largely eliminated tuning-holes from oboes, except for some German instruments which might still retain one. The low B key was initially operated by the left thumb on early Sellner-Koch oboes, but this was found inconvenient and control was transferred to the left little finger. Tuning was often adjusted through the use of interchangeable upper-pieces or via different staple lengths. The 19th century oboe had a total of sixteen note-holes, counting the octave-key[96].

The widespread adoption of mechanical features from Böhm's 1832 flute, such as cupped keys with stuffed pads, pillar-mounts, ring-keys, and rod-axles, began influencing other woodwind instruments, including the oboe, around 1840. These advancements provided significant mechanical advantages. A notable feature that emerged was the perforated key cover over the c'' sharp hole, attributed to the player Brod, who aimed to simplify the half-closing of the small finger-hole. The earlier F sharp key variations were superseded by a system incorporating two ring-keys over the E and F sharp holes and a smaller F sharp key, all mounted on the same rod-axle[97].

As the 19th century progressed, two distinct national schools of oboe design and playing emerged: the French and the German. While both schools eventually incorporated modern mechanisms, they retained differing construction features that influenced their tone[98]. French oboes, championed by makers like Frédéric Triébert, Barret, and Lorée[99], became known for their streamlined profile and were played with lighter, narrower reeds[100]. This school focused on developing mechanical facility and simplifying fingerings, leading to systems like Triébert's système 6, which became the basis for the Conservatoire model adopted in 1881[101]. In contrast, the German and Austrian oboes, while adopting modern keywork like ring-keys and rod-axles, often retained older construction elements such as wooden key mounts, which tended to damp resonance, and a slightly wider

[96] Cf. Carse 1965, p. 134-135.
[97] Cf. Carse 1965, p. 136-137.
[98] Cf. Page et al. 2001.
[99] Cf. Carse 1965, p. 136.
[100] Cf. Page et al. 2001.
[101] Cf. Burgess/Haynes 2004, p. 125.

bore[102]. Makers like Sellner and Koch were prominent in this tradition[103]. The German/Austrian approach also maintained features like the incurve at the bell bottom and tuning holes in the bell even as the French oboe advanced[104].

A notable divergence in tonal character emerged between the French and German schools. The French oboe developed a sweet, bright tone, valued for adding brilliance in the orchestra. The German oboe, with its wider bore and different key mounting, cultivated a heavier, darker sound, but it blended better with other instruments[105]. Richard Strauss, in his amplification of Berlioz's Instrumentation (1904), offered a comparison distinctly unfavourable to the German tone. He described it as “thick and trumpet-like”[106].

In essence, the 19th century represented a fundamental shift in the oboe's history, transforming it from a relatively simple instrument relying heavily on player technique to a complex mechanism designed for greater technical facility and chromatic capability. This period of intense experimentation and national divergence laid the groundwork for the modern oboe, culminating in the establishment of systems like the Conservatoire model that would dominate the 20th century[107].

5.2 Role of the oboe in the 19th century

The orchestra remained the primary domain for the oboe throughout the 19th century[108]. Early in the century, composers typically wrote for a pair of oboes, with the principal player often also performing the cor anglais when required. However, reflecting a growing interest in instrumental colour and balancing the expanding string sections, oboe sections were gradually enlarged[109]. Distinct national traditions, particularly the French and German schools, fostered different tonal ideals

[102] Cf. Page et al. 2001.
[103] Cf. Carse 1965, p. 136.
[104] Cf. Carse 1965, p. 141.
[105] Cf. Page et al. 2001.
[106] Cf. Carse 1965, p. 141.
[107] Cf. Burgess/Haynes 2004, p. 119.
[108] Cf. Burgess/Haynes 2004, p. 171.
[109] Cf. Burgess/Haynes 2004, p. 130.

for the oboe within the orchestral texture. Composers like Wagner, increasingly integrated instruments of the lower oboe family members, like english horn, into the full orchestral sound[110]. Berlioz, for instance, noted that the oboe's low notes could be useful for creating “strange and lamentable harmonies” when combined with other low woodwinds, and he found the cor anglais's low register particularly effective for musical ideas expressing fear and anguish[111].

In the realm of chamber music, the 19th century witnessed a notable development in the wind quintet. While early examples appeared around 1800, the genre gained significant attention about two decades later with the premieres of Anton Reicha's quintets. Other composers, such as Franz Danzi and Henri Brod, also contributed to this repertoire, which typically featured flute, oboe, clarinet, horn, and bassoon[112].

Indeed, the sources suggest that the oboe's solo literature by the most prominent composers of the Romantic era was comparatively rare[113]. This has been attributed, at least in part, to the instrument's perceived limited range and expressive capabilities on its own, making it seem unequal to the aspirations of Romantic expression compared to other instruments[114]. Consequently, much of the solo music written for the oboe during this period consisted of virtuoso fantasies, morceaux de salon, and similar pieces, often composed by oboists themselves for their own use. While the quality of this repertoire is noted as variable, certain works have seen a revival in modern times, including pieces by Kalliwoda, Molique, and Antonio Pasculli[115]. Robert Schumann's Drei Romanzen, Op. 94 (1849), which also had alternative versions for other instruments, stand out as a significant exception from a major composer, being more lyrical than virtuosic[116].

The development of the oboe and its repertoire in the 19th century was significantly shaped by the instrument's players, makers, and composers, particularly when these roles were combined in one individual. Among the notable oboists of

[110] Cf. Page et al. 2001.
[111] Cf. Burgess/Haynes 2004, p. 145.
[112] Cf. Burgess/Haynes 2004, p. 130.
[113] Cf. Burgess/Haynes 2004, p. 128.
[114] Cf. Page et al. 2001.
[115] Cf. Burgess/Haynes 2004, p. 129.
[116] Cf. Page et al. 2001.

this period were figures like Joseph Sellner (1783-1843), a well-known player, developed oboes with a significant number of keys[117]. Henri Brod (1799-1839), a pupil of Vogt, became dissatisfied with the limited keywork and worked to improve the instrument, likely in association with the maker Guillaume Triébert[118]. Other important oboists included Giuseppe Cappelli and Clemente Salviani in Italy, who also published method books[119].

6. The modern oboe

6.1 Current design and performance techniques

The modern oboe represents the culmination of several centuries of evolutionary development, with a particularly significant period of refinement occurring during the 19th century. While the instrument's history reveals continuous change, the adoption of the French-developed Conservatoire system towards the end of the 19th century marked a period of stabilization in its physical form[120]. This system has subsequently become the predominant international standard[121].

The modern oboe is a double-reed woodwind instrument featuring a conical bore. Its main body typically consists of a slender tube, approximately 59 to 60 centimetres in length, constructed primarily from dense hardwoods such as African Blackwood, also known as Grenadilla. Although wood is the standard material, instruments are occasionally crafted from ebonite or metal. The instrument's body is usually assembled from three sections connected by tenon and socket joints. The conical bore is narrow and gradually expands for about five-sixths of the tube's length before opening more considerably to form a moderate bell[122]. The number of side holes ranges between sixteen and twenty. On a modern instrument, typically only six holes are directly controlled by the fingers, while the re-

[117] Cf. Carse 1965, p. 136.
[118] Cf. Bate 1956, p. 59.
[119] Cf. Page et al. 2001.
[120] Cf. Burgess/Haynes 2004, p. 125.
[121] Cf. Page et al. 2001.
[122] Cf. Bate 1956, p. 1.

maining notes and alternative fingerings are managed indirectly through a sophisticated mechanism of keys. Slight variations in key mechanisms persist, notably the thumb-plate open-hole system predominantly used in Britain, which influences the tone balance[123].

The sound of the oboe is initiated and sustained by a generator known as the reed[124]. This consists of two thin blades, which are bound together with thread onto a narrow, tapered metal tube called a staple[125]. These blades are made from cane – specifically, the semi-tropical grass Arundo donax or Arundo sativa[126]. The staple acts as an extension of the oboe's bore. When the player places the reed between their lips and blows gently, the blades vibrate against each other, energizing the air within the instrument's bore[127]. For some time now, there have been attempts to make reeds from synthetic materials such as plastic or fibreglass. Nevertheless, the ambition for a more enduring and consistent material to replace the transient nature of Arundo donax has met with limited success thus far[128].

The modern oboe functions as a complex vibratory system[129]. The varying effective length of the air column, controlled by the opening and closing of note-holes and keys, determines the fundamental pitches produced[130]. The range of the modern oboe is considerable, typically extending from B flat below the staff up to a'''. This range encompasses nearly three octaves. The lowest fifteen notes are produced as fundamental frequencies. Notes above these fundamentals, particularly in the upper registers, are acoustically produced as harmonics of the lower notes. Accessing these higher harmonics requires changes in the player's lips pressure on the reed, complemented by the use of the keys[131]. The modern oboe offers a wide range, but its characteristic tone is often considered to be at its finest within a medium compass, roughly from f' to b'' flat. In this central range, the tone

[123] Cf. Page et al. 2001.
[124] Cf. Bate 1956, p. 108.
[125] Cf. Bate 1956, p. 2.
[126] Cf. Page et al. 2001.
[127] Cf. Bate 1956, p. 2.
[128] Cf. Burgess/Haynes 2004, p. 257.
[129] Cf. Bate 1956, p. 108.
[130] Cf. Bate 1956, p. 1-2.
[131] Cf. Page et al. 2001.

is described as sweetest, avoiding the potentially reedy quality of lower notes or the thinness of the acute register[132].

Mastering the oboe requires a highly developed and complex technique. A fundamental aspect involves the management of the reed and breath. The control of breath and embouchure pressure combined allows the player to modify intonation, tone colour, and dynamics. Articulation on the oboe, the process of cleanly starting and separating notes, is typically achieved by bringing the tongue into contact with the reed to stop the vibration of the air column. Vibrato, a pulsing of the tone, is another key expressive technique. While earlier periods utilized flattement or finger vibrato, modern oboists typically employ breath vibrato[133].

Beyond traditional techniques, the capabilities and demands on modern oboists have expanded considerably, particularly since the mid-20th century[134]. Multiphonics, or the production of chords on a single instrument, have become an important category of extended techniques, enabled by the oboe's complex harmonic spectrum, which can produce rich, sometimes dissonant, combinations[135]. Circular breathing, a technique allowing a player to inhale while simultaneously exhaling and maintaining continuous sound by using the cheeks as an air reservoir, became a regular part of the oboist's skill set in the 1970s, although evidence suggests some players may have used it much earlier[136]. These extended techniques have transformed the soundscape of the instrument and are often required for performing contemporary repertoire[137]. Composers and repertoire demands have continually pushed the boundaries of what is technically and musically feasible on the instrument[138].

[132] Cf. Bate 1956, p. 154.
[133] Cf. Page et al. 2001.
[134] Cf. Page et al. 2001.
[135] Cf. Burgess/Haynes 2004, p. 273.
[136] Cf. Page et al. 2001.
[137] Cf. Burgess/Haynes 2004, p. 268.
[138] Cf. Bate 1956, p. 53.

6.2 The role of the oboe in modern music

In the realm of orchestral music, the oboe has maintained a significant presence. The oboe section saw expansion in the 20th century. Composers like Schoenberg and Stravinsky wrote scores requiring four oboes and one english horn[139]. The larger members of the oboe family, such as the english horn, have become permanent or occasional members of the orchestra, sometimes used to strengthen the oboe section or provide unique tonal colours[140].

The 20th century witnessed a notable re-emergence of the oboe as a solo instrument. This development was significantly spurred by the artistry of numerous distinguished oboists. By the mid-20th century, significant works included concertos by Strauss, Martinů, and Zimmermann, and sonatas by Hindemith, Dutilleux, and Poulenc. Britten's Six Metamorphoses after Ovid, op. 49 for solo oboe, influenced subsequent compositions for the instrument, notably in its use of two-part writing to exploit different registers and dynamics. From 1960 the astonishing versatility and technique of virtuosos like Heinz Holliger, brought the oboe further prominence across diverse musical idioms, leading to numerous works being written for him[141].

In chamber music, the oboe has also seen a return to prominence, particularly in forms like the wind quintet, for which important works have been written by composers such as Ibert, Françaix, Milhaud, Barber, Arnold, Stockhausen, Ligeti, Holliger, and Arvo Pärt[142].

While the oboe has historically lacked a strong connection to jazz, attempts were made in the 1930s to create instruments with saxophone fingerings to encourage doublers[143]. More recently, the oboe has appeared in jazz, New Age, and fusion contexts[144].

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[139] Cf. Page et al. 2001.
[140] Cf. Burgess/Haynes 2004, p. 186.
[141] Cf. Page et al. 2001.
[142] Cf. Burgess/Haynes 2004, p. 251.
[143] Cf. Burgess/Haynes 2004, p. 297.
[144] Cf. Page et al. 2001.

A pivotal figure in the history of modern French oboe playing was Georges Gillet. His playing style characterized the subsequent two generations of French oboists[145]. In England, Léon Goossens, a pupil of Charles Reynolds and the Belgian Henri de Busscher, forged an exemplary career as an orchestral musician, soloist, and teacher. Goossens became known for a silken tone, supple phrasing, and controlled vibrato[146]. Across the Atlantic, Marcel Tabuteau emerged as a profoundly influential figure in the United States[147]. In the second half of the 20th century saw the rise of the Swiss virtuoso Heinz Holliger, whose immense versatility and technical prowess brought further prominence to the oboe across a broad spectrum of musical idioms. Holliger not only performed Baroque and Classical repertoire, but also revived neglected 19th century works and held a significant role in contemporary music as both a performer and composer. Many works have been composed specifically for him by notable composers such as Penderecki, Berio, and Carter[148]. Holliger is recognized as the most recorded oboist historically, demonstrating proficiency in a remarkable range of repertoire from Baroque masterworks to modern compositions[149].

7. Conclusion

The lineage of the modern oboe traces back to its precursor, the shawm. A significant transformation occurred in the latter half of the 17th century, primarily in France, leading to the emergence of the instrument known as the oboe. This transitional period marked a shift from a one-piece construction to a body comprised of three distinct parts. Crucially, the method of sound production changed from using a pirouette to placing the double-reed directly between the player's lips, fundamentally distinguishing it from the shawm family. The advent of the French oboe represented a conscious departure from certain characteristics of

[145] Cf. Burgess/Haynes 2004, p. 202.
[146] Cf. Page et al. 2001.
[147] Cf. Burgess/Haynes 2004, p. 201.
[148] Cf. Page et al. 2001.
[149] Cf. Burgess/Haynes 2004, p. 278.

the shawm, including changes to tone-hole size relative to bore width to facilitate cross- and half-hole fingerings, thereby increasing the range of usable tonalities.

The 18th century is characterised as a period of relative stability in the instrument's design. During this time, the oboe served prominent composers such as Bach, Handel, Haydn, and Mozart. Instruments from this era were commonly constructed from boxwood. Subtle changes in external features, such as the evolution of bell rings, occurred over the course of the century. Despite minor improvements, the instrument underwent no radical changes during this ninety-year phase.

The 19th century witnessed a period of significant transformation and refinement, driven by skilled craftsmen and artists responding to increasingly demanding musical requirements. This era saw the rapid addition of keys, evolving from the earlier two-key standard to instruments featuring thirteen or more keys. Two distinct lines of development became apparent, notably the French and German schools. The French approach, exemplified by makers like the Triébert family and culminating in the Conservatoire model, emphasised precise adjustments to the bore and note-hole placement alongside mechanical keywork. While alternative systems like the Böhm oboe also emerged, their reception was mixed. This century marked a shift from empirical growth to organised development.

In the 20th and 21st centuries, the Conservatoire model has largely remained the dominant design internationally, particularly favoured in countries like England, Belgium, and Italy. Although the fundamental design has been stable, the instrument has continued to undergo refinements to address minor issues and improve mechanical facility and tone. Current instruments are typically made from African Blackwood – Grenadilla. The history of the oboe's design is not considered concluded, as development and adaptation to new demands persist, albeit perhaps less dramatically than in the 19th century.

Throughout its history, the oboe has held a significant position in Western music. It has remained an integral part of orchestral and chamber ensembles ever since. Its unique tone colour has been valued for both individual expression and ensemble blending. The development of the instrument's capabilities is closely tied

to the virtuosity of its players and the demands placed upon it by composers, as evidenced by the solo literature. In the modern musical world, the oboe remains a highly valued wind instrument, appreciated for its distinctive voice in solo and ensemble settings. The journey from the early oboe to the modern Conservatoire oboe reflects centuries of refinement aimed at enhancing its expressive capabilities and meeting the evolving requirements of musical performance.

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