CHAPTER 2

Historical aspects

2.1 Introduction

The bass clarinet has developed, through a variety of shapes and models, from a rather primitive into a very sophisticated musical instrument. The current bass clarinet types owe their advanced keywork for a large part to Adolphe Sax, who made the improvement of the bass clarinet his first project. The many keys and alternative keys at the disposal of today's performers make microtonality a viable option. Giving the bass clarinet a historical context will help to show the importance that the development of the instrument and its keywork has had on the microtonal possibilities.

Another historical aspect to look at is the development of the solo and chamber music repertoire of the bass clarinet. Few early pieces exist, and it was not until the 1960s and 1970s that the instrument's repertoire started to grow rapidly. Attracted by the vast array of sound variants the bass clarinet was capable of, composers included extended techniques in their works, so microtonality became part of the new bass clarinet language as early as 1964 and has played an important role ever since.

2.2 Invention and development

The bass clarinet was a rather late arrival in solo and chamber music: it was only in 1955 that the first bass clarinet recital was given, by Josef Horák, in the Czech Republic. However, the instrument was invented in the eighteenth century.

As American clarinettist Eric Hoeprich writes, "from the moment of the clarinet's inception, various types of bass clarinet appeared, pitched an octave below conventional clarinets, in C and B flat, in a variety of shapes and sizes" (2008, p.259). German instrument collector Günter Dullat (2001), Hoeprich (2008), instrument collector Johan van Kalker (1997), British clarinet expert F. Geoffrey Rendall (1978), British clarinettist Albert Rice (2009), and Sparnaay (2011) all agree that early forms of the bass clarinet appeared in the second half of the

eighteenth century. A few early instruments can be found in museums (Brussels, Florence, Paris, Munich, et al.), but many of the earlier models were unmarked or unstamped, and as Rice states, "the earliest attempts to construct a bass clarinet are designated prototypes" (2009, p.252).

Although Rice believed that the earliest term used to describe the instrument was "Baßclarinetten in a 1791 review of Forkel's *Musikalischen Almanachen*" (2009, p.250), the first time a bass clarinet is referred to in writing, is in the Parisian journal *L'Avant Coureur* on May 11, 1772: mention is made of a 'Basse-Tube' or 'Basse de Clarinette' invented by le Sieur G[illes] Lot.[11] According to the article this bass clarinet had a considerable ambitus (a full three and a half octaves) and was designed to be played as both a solo and an orchestral instrument (Rendall, 1978, p.139). However, the instrument has not been preserved (Kalker, 1997, p.111).

Looking at the shapes and the names of the bass clarinets developed in the second half of the eighteenth and the first half of the nineteenth centuries, it is a real kaleidoscope: "In fact, eighteenth- and nineteenth-century bass clarinet designs are more diverse than any other woodwind except perhaps the basset horn" and "the variety of names applied to the bass clarinet is impressive" (Rice, 2009, p.250). An assortment of picturesque names are attributed to the bass clarinet: basse guerrière, clarone (still in use as synonym for clarinete baixo in Brazil), bassorgue, polifono, bass clarone (a pleonasm), glicibarifono, clariofon, bimboclarino, and the list goes on. "By about 1860, the name was standardized for use in published music scores and books as Bass Klarinette (German), basse clarinette (French), clarinetto basso (Italian) and bass clarinet (English)" (Rice, 2009, p.252).

Rice writes extensively and in great detail about the early days of the bass clarinet. He has documented the prototypes and early attempts to build a bass clarinet according to the different shapes found (2009, pp.252-322).[12] Rice categorizes them as:

- plank shape (the oldest shape encountered)
- curved or basset horn shape (the Mayrhofers' model)
- the bassoon shape (with the Grenser's models as the best-known examples)
- the serpent shape (used by the Italian Papalini)

[11] Mr G[illes] Lot

[12] Dullat (2001) also subdivides the different makes and models according to the different shapes.

- the straight or clarinet shape (the shape that was to become the standard from the second half of the eighteenth century)
- the Ophicleide shape (model used by Widemann, Buffet, and Martin Frères)

According to Kalker "ein weiteres wichtiges Datum für die Entwicklung der Bassklarinette ist das Jahr 1807. In diesem Jahr konstruierte der Uhrmacher Desfontenelles (Lisieux, Frankreich) eine primitive **Bassklarinette** (die erste in der heute gebräuchlichen geraden Form)" (1997, p.115).[13] This model bass clarinet can be said to resemble a saxophone, as it has an upturned bell and a curved barrel. It has been described as a *clarinette à perce conique* (Pierre, 1890, p.50),[14] but "the conicity is only very slight, so it can be considered a true clarinet, and probably the earliest extant straight-model bass [clarinet, HB]" (Hoeprich, 2008, p.262). Whilst the design of this instrument hints at the parabolic cone of Sax's saxophone design, the instrument overblows at the twelfth (as do clarinets), and not at the octave (like the saxophone).

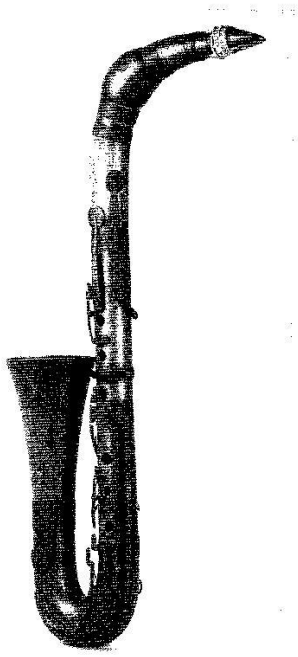

Figure 20: Hoeprich (2008, p.261), image of Desfontenelles's bass clarinet

[13] "Another important date for the development of the bass clarinet is the year 1807. In this year clock maker Desfontenelles (Lisieux, France) constructed a primitive **bass clarinet** (the first in the nowadays customary straight form)" (Kalker, 1997, p.115).
[14] A clarinet with a conical bore.

The collaboration between clarinettist Isaac François Dacosta and Paris instrument maker Louis Auguste Buffet, also called Buffet jeune [the younger, HB], resulted in the production of a clarinet-shaped bass clarinet, later used in Giacomo Meyerbeer's opera *Les Huguenots*. Buffet jeune greatly improved the keywork of both the soprano clarinet and the bass clarinet, by adapting the Boehm system to the clarinet. His instruments were 13 or 14-key straight-shaped bass clarinets, made of rosewood. The model from circa 1834 had a straight, rosewood bell, whilst later models had metal bells. "The evidence of a second register key suggests the influence of Adolphe Sax's bass clarinets" (Rice, 2009, p.288) on Buffet jeune's instruments, as Sax's bass clarinets all included a second register key.

2.3 Adolphe Sax

Antoine-Joseph Sax, better known under his adopted name Adolphe, can be considered one of the most brilliant and creative instrument makers ever. He is, of course, most famous for his invention of the saxophone, but "it was to the clarinet that he first applied his brains and mechanical skill" (Rendall, 1978, p.144). Sax is the person accountable for the "most important advances in the evolution of the bass clarinet" (Rice, 2009, p.291).

Working in his father's instrument workshop, Sax made his reputation as an inventive and excellent instrument maker with his first project: the construction of a *nouveau système de clarinette-basse* (new bass clarinet system). With his new, straight model 21-key bass clarinet, Sax succeeded in solving two major problems that prior bass clarinet models had: poor intonation, and an uneven sound quality between the different registers. In order to improve these issues Sax conceived a second register key, which also facilitated playing altissimo notes. Rendall has said that not only was the range increased at the top by the second register key, but that it also allowed the highest notes to come out more easily (1978, p.144), an invention that players around the world still benefit from every day.

Sax's model bass clarinet required a completely new key operating system, but Sax had the knowledge and the technical facilities to concretize his ideas. The 1838 model was the first bass clarinet model where the tone holes were covered by keywork. "La nouvelle clarinette [basse, HB] de Sax offrait une plus grande justesse dans toute l'étendue de l'instrument par l'emploi généralisé de

clefs qui lui permettaient un emplacement mieux calculé de trous, sans devoir tenir compte de l'écartement des doigts" (Haine, 1980, p.47).[15] The instrument's bore was wider than the bore of its predecessors and contemporaries, in order to have "a deep and strong tone quality" (Rice, 2009, p.304). Rice summarizes eight more design elements which, combined together, "led to a greater resonance of sound, evenness of tone, security in blowing, security in fingering, and accuracy of intonation" (2009, p.304).[16] Finally, Belgian saxophonist Jean-Pierre Rorive mentions an extremely important innovation: "Il [Sax, HB] dote l'instrument d'un système compensateur qui permet dorénavant les sons glissés ou 'portamento' ainsi que des trilles jusque-là irréalisables" (2014, p.25).[17] This technical modification opened up the microtonal possibilities of the instrument by allowing pitches between the semitones.

[15] "Sax's new [bass, HB] clarinet offered better intonation in all the instrument's registers by the generalized use of keys which facilitated a better calculated placement of the holes, without the necessity to take into account the spreading of the fingers" (Haine, 1890, p.47).

[16] These are: (1) large tone holes with corresponding key heads; (2) wide bore; (3) large finger holes covered by conveniently placed wide plateau and open standing keys; (4) the placement of the first register key on a raised metal platform and the second register key with a small pinhole on a metal platform on the front side of the brass crook; (5) use of a large brass, rounded saddle to secure the long levers of the F♯/C♯ and E/B keys; (6) redesign of a large-size mouthpiece with a socket having a brass ferrule at its end, requiring a large reed and a two-screw brass ligature; (7) redesign of key heads in a flat and rounded form; (8) inclusion of a large brass thumb rest with a ring attached to the upper end, designed for a neck strap.

[17] "He [Sax] provides the instrument with a compensating system which from now on makes glissandi or 'portamento' possible, as well as trills unable to be played until then" (Rorive, 2014, p.25).

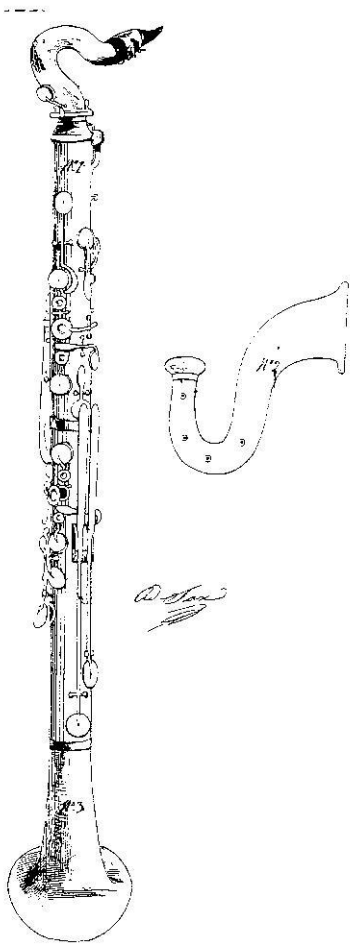

Figure 21: Hoeprich (2008, p.265), Belgian patent drawing for a new bass clarinet by Adolphe Sax (Brussels, 1838, Belgian patent 21.06.1838, Nr. 3739/1051)

Due to his technical innovations it is no wonder that composers of Sax's era became very interested in his improvements of the clarinet and especially the bass clarinet. Meyerbeer, Gaetano Donizetti, Gioachino Rossini, and François Antoine Habeneck were great supporters of Sax's inventions and modifications. They were captured by the wonderful sound, the perfect intonation, and the technical possibilities of Sax's bass clarinet. In December 1843 Meyerbeer visited Sax's workshop and was amazed by the sound of his bass clarinet (Rorive, 2014, p.35).

Hector Berlioz, quite possibly Sax's most fervent supporter, wrote:

> La nouvelle Clarinette Basse de M. Adolphe Sax est bien plus perfectionnée encore. Elle a 22 clés.[18] Ce qui la distingue surtout de l'ancienne c'est une parfaite justesse, un tempérament identique dans toute l'échelle chromatique et une plus grande intensité de son. Comme le tube est fort long, l'exécutant étant debout, le pavillon de l'instrument touche presque la terre, de là un étouffement très fâcheux de la sonorité, si l'habile facteur n'eut songé à y remédier au moyen d'un réflecteur métallique concave qui placé au dessous du pavillon, empêche le son de se perdre, le dirige où l'on veut et en augmente considérablement le volume. (1844, p.150)[19]

Unfortunately, none of the reflectors designed for sound projection and to increase the volume of the instrument have survived (Rice, 2009, p. 293), but they could be considered as predecessors of the curved bell.

With his designs Sax set the standard for the instruments still in use today. As mentioned above, Sax enlarged the ambitus and facilitated the higher registers by using a second register key. But Sax was not only a great instrument maker and inventor, he also was a skilled performer. It is noteworthy that "Sax indeed played up to e'''' [E5, HB] in the presence of Meyerbeer" (Rendall, 1978, p.147). French critics and music publishers Marie and Léon Escudier—les frères Escudier—acknowledged that Sax "est devenu un virtuose très-habile"[20] on the bass clarinet and that the instrument "n'embrasse pas moins de trois octaves et une sixte dans son étendue ordinaire"[21] (1854, p.185).

[18] This is quite possibly a mistake: Sax's new system bass clarinet had 21 keys.

[19] Mr Adolphe Sax's new Bass Clarinet is even more improved. It has 22 keys. What distinguishes it especially from the old, is a perfect intonation, an even sonority in the overall chromatic scale and a bigger intensity in sound. As the tube is very long, the bell of the instrument almost touches the ground, when the performer plays standing, which would result in a very nasty dampening of the sound, if the skilled manufacturer had not thought to solve that problem by means of a concave metal reflector which, placed under the bell, prevents the sound from getting lost, directs it where required and raises the sound volume considerably. (Berlioz, 1844, p.150)

[20] "has become a very skilled virtuoso" (L. Escudier and M. Escudier, 1854, p.185).

[21] "comprises not less than three octaves and a sixth as its usual ambitus" (L. Escudier and M. Escudier, 1854, p.185).

2.4 Early players and repertoire

Meyerbeer was one of the first composers to write a substantial bass clarinet solo part. It appears in the fifth act of his opera *Les Huguenots* and was first performed on February 29, 1836. This bass clarinet feature was inspired by the collaboration between Buffet jeune and Dacosta. The Buffet jeune bass clarinet was used in the many performances of this successful opera by the Orchestre de l'Opéra de Paris' principal clarinettist Franco Dacosta (Hoeprich, 2008, p.264; Rice, 2009, p.348). For 25 bars the bass clarinet is the only instrument to accompany three singers, and in the 'molto maestoso' introduction "Meyerbeer boldly writes an arpeggio from e [E1, HB], the lowest note of Buffet's bass clarinet, to its highest practical note of g3 [G4, HB]" (Rice, 2009, p.349): an ambitus of three octaves and a minor third.

Some sources, including Hoeprich (2008, p.271), consider Meyerbeer to be the first composer to introduce the bass clarinet into the orchestra, but it was in fact Saverio Mercadante (1795-1870). He wrote a long solo for the bass clarinet in the second act of his opera *Emma d'Antiochia*. This work was premiered on March 8, 1834, two years before the first performance of *Les Huguenots*. Rice justly calls it the "earliest surviving music for the bass clarinet" (2009, p.342). The composition came to fruition through a collaborative process. Mercadante knew Catterino Catterini, a clarinettist and inventor, who had constructed his own bass clarinet model, which he initially, in 1833, called a 'polifono', and a year later renamed a 'glicibarifono'. The glicibarifono is a non-transposing instrument in C. The solo is virtuosic in nature and includes "a level of difficulty that does not commonly appear for the bass clarinet until the early twentieth century" (Rice, 2009, p.343). The solo in Mercadante's opera goes from C1 up to F4: an ambitus of three octaves and a fourth, slightly larger than the ambitus Meyerbeer used in *Les Huguenots*.

The bass clarinet ambitus used by Mercadante and Meyerbeer in their solos is remarkable, as the players would not have had access to the more elaborate keywork systems of today's models. Therefore, they would have had to use their technical skills (embouchure, lower lip positioning) to produce the natural overtones of their instruments in order to play notes higher than B2.

After the introduction of the bass clarinet into the opera orchestra by Mercadante and Meyerbeer, other orchestral and operatic composers followed their example, including Berlioz, Donizetti, Giuseppe Verdi, Richard Wagner,

Franz Liszt, and Bedřich Smetana, thus paving the way for a long tradition of writing for the bass clarinet in an orchestral setting.

It is not until the very end of the nineteenth century that the bass clarinet can be found in solo and chamber music repertoire. Two works for bass clarinet and piano were published in the 1890s by Evette and Schaeffer: Jules Pillevestre's *Offertoire (Premier)* and Alexandre-Sylvain Petit's *Evocation*. Two other pieces, coincidentally with the same title, *Romanze*, by Friedrich Diethe and August Klughardt respectively, were published circa 1900. However, as Hoeprich states, "they make but modest use of the instrument's range and its potential as a solo voice" (2008, p.276). A slightly later work, François Rasse's *Lied* (1921), still uses a range similar to the works by Pillevestre and Petit.

A few years later, two more ambitious works were written: *Suite* op. 37a for bass clarinet (or clarinet) solo (1926) by Adolf Busch and *Sonata* op. 41 for bass clarinet and piano (1927/28) by Othmar Schoeck. Both pieces were commissioned by the Swiss maecenas/amateur (bass) clarinettist Werner Reinhart. Reinhart, however, did not give Schoeck's first performance (Hoeprich, 2008, p.276). The premiere took place in Luzern on April 22, 1928, with Wilhelm Arnold, bass clarinet, and Fritz Müller, piano. Both these works now belong to standard bass clarinet repertoire, but only Schoeck really used the instrument to its full potential. He employed a much wider range, from D1-F4, an ambitus of three octaves and a minor third.[22]

In France, Eugène Bozza and Jules Semler-Collery wrote short but interesting works for bass clarinet and piano, entitled *Ballade* (1939) and *Légende et Divertissement* (1953) respectively. A second work by Semler-Collery, *Cantabile*, was published in 1956. However, as in the case of Busch, the lowest pitch used by both Bozza and Semler-Collery is E1. This could be seen as music written for a 'low clarinet', rather than specifically for a bass clarinet, abstaining from the larger ambitus the bass clarinet has to offer.[23] *Légende et Divertissement* was dedicated to Jean Dubois, 'soliste de la Musique de la Garde Républicaine et de l'Opéra Comique', who recorded it in 1953 on a 78-rpm record 'Selmer'. This is arguably the first surviving bass clarinet recording of a European chamber music work.

Between 1900 and 1950 several larger ensemble pieces used the bass clarinet. These include: Arnold Schoenberg's *Pierrot Lunaire op. 21* (1912), Leoš

[22] Coincidentally, the same ambitus as Meyerbeer, but one tone lower.
[23] Another such work is *Recitative & Slow Dance* (1950), written by the English composer Gordon Phillips: the composition starts and ends with E1, the lowest note of the piece.

Janáček's *Mládi* (1924), Richard Strauss' *Symphonie für Bläser* (1944-45), and Paul Hindemith's *Wind Septet* (1948). Despite this, solo and chamber works for the bass clarinet remained scarce.

2.5 The bass clarinet 'revolution'

The 1960s and the 1970s were 'booming' decades for the bass clarinet as an independent solo instrument. So many works were written for the instrument that it is fair to speak of a veritable emancipation of the bass clarinet. Three pioneers actively promoted the instrument: Eric Dolphy, Josef Horák, and Harry Sparnaay. Their impact on fellow performers and composers has been so great that it can be called a bass clarinet 'revolution'!

2.5.1 Eric Dolphy

The pre-Dolphy history of bass clarinet playing in jazz resembles in many ways the development of the instrument in classical music: it appeared mostly in larger ensembles and big bands. For example, Harry Carney, baritone saxophonist of the Duke Ellington Orchestra, frequently doubled on bass clarinet, big band leader and clarinettist Benny Goodman picked up the bass clarinet on occasion, and another famous clarinettist, Buddy DeFranco, recorded one LP on bass clarinet at the request of his recording company. Herbie Mann's reputation as a flute player did not prevent him from choosing the bass clarinet as "his most suitable second horn, with its unique tonal qualities" (Keepnews in Mann, 2001, liner notes) and on July 3, 1957 Mann travelled to Los Angeles—Dolphy's territory so to speak—to make a recording that Keepnews describes as "what must be the first bass-clarinet album ever (Keepnews in Mann, 2001, liner notes). Mann was joined by 'West Coast' musicians to record six standards and one original composition in a relaxed and smooth jazz style. The ambitus he uses on the bass clarinet is rather limited: mostly keeping within the first two and a half octaves from C1 up. Although Mann uses the lowest third of the instrument in his improvisations, it is notable that the overall range within which he operates is very similar to the French works for bass clarinet and piano written in the same decade (see section 2.4).

A year later Dolphy started changing the whole concept of bass clarinet playing in jazz. Originally a clarinet and saxophone player, he became interested in the bass clarinet when his teacher, Merle Johnston, helped him to test a bass clarinet he had seen in a pawn shop (Simosko & Tepperman, 1996, p.37). In 1958 Dolphy joined the Chico Hamilton Quintet, playing alto saxophone, flute, and bass clarinet (and sometimes soprano clarinet). This signalled the start of his recording career. Until his untimely death in Berlin on June 29, 1964 Dolphy had been one of the most prolific jazz musicians, making more than 120 recordings over a period of five years. More than 100 bass clarinet solos have been documented in Simosko's and Tepperman's discography (1996, pp.140-142). These recordings included his work as a 'sideman'—with Charles Mingus and John Coltrane amongst others—and as a band leader. His debut LP *Outward Bound* was recorded in 1960. Dolphy extensively played bass clarinet on this LP.

"Dolphy's *Out to Lunch* album (Blue Note Records, 1964) is arguably the finest to be released under his own name" (C. Heaton, 2006, p.64). Speaking about Dolphy's bass clarinet playing on the track *Hat and Beard* (Dolphy, 1987, track 1), British producer, keyboard player, programmer, recording engineer, and researcher Chris Heaton writes: "He produces a torrent of timbral gestures, vast leaps in register, barking multiphonics, and intense, labyrinthine runs" (2006, p.64). For many authors and critics this solo is Dolphy's bass clarinet improvisation par excellence. For me, however, Dolphy's bass clarinet playing on *Epistrophy* (Dolphy, 1991, track 1), the opening track on the *Last Date* album,[24] is a more complete demonstration of his bass clarinet mastery. In this recording he makes use of quartertone (trills), a large ambitus, harmonics, and multiphonics, amongst other techniques.

Dolphy's improvised solos illustrate both his free approach to tonality, and his keen interest in microtonality. In his only interview with American jazz critic Leonard Feather, Dolphy talks about his belief that individuals have differing aural capacities:

> Well, that's the idea, you CAN play every note you like. Of course, you only can play what you can hear, and quite naturally…more or less I guess what I hear is not to your hearing, to what you're hearing. So quite naturally, I hear, uh, more notes on uh, on the same thing that's been said before. (Robinson & Ladenson, 1998)

[24] The *Last Date* album was recorded in the Netherlands on June 2, 1964.

Dolphy struck the right chord on that subject: I believe that the ability to 'hear' internally what you want to play is crucial when making music. Microtonal playing requires subtle changes in finger technique and embouchure, therefore, hearing the (microtonal) result you want to achieve is of the utmost importance. Australian/British jazz saxophonist Ray Swinfield said:

> Now when a saxist or bass-clarinettist attempts harmonics he must have a very good ear to produce the notes and get them right. Otherwise he will produce either other notes or more than likely, a sort of cow-like moan from the instrument. (Swinfield in Horricks, 1989, p.48)

The first time Feather had heard Dolphy play bass clarinet, with the Chico Hamilton Quintet, he thought that Dolphy had intonation problems, but Dolphy later explained "his acceptance of quarter-tone intervals" in an interview with American critic Don DeMicheal (Horricks, 1989, p.21). In the interview, which was published in Downbeat magazine (April 12, 1962), Dolphy spoke of listening to bird whistles in relation to his use of quartertones on the flute:

> 'That's the way birds do', he said. 'Birds have notes in between our notes - you try to imitate something they do and, like, maybe it's between F and F-sharp, and you'll have to go up or come down on the pitch. It's really something! And so, when you get playing, this comes'. (DeMicheal, 2009, p.88)

Dolphy also extended the upper range of the bass clarinet. According to Swinfield he did this by using "overtones or harmonics produced by playing natural harmonics" and later, by using "fingerings acquired, modified and then varied" (Swinfield in Horricks, 1989, p.49). The microtones he incorporated in his improvisations are often a direct consequence of his modifications and variations of root-overtone fingerings. A transcription of the 1961 Berlin concert version of *God Bless the Child*, made by British trumpeter Ken Rattenbury, illustrates Dolphy's range on the bass clarinet. Roughly two minutes into the solo Dolphy plays a G♭5, which Rattenbury states is "a generous octave above the credible range of the instrument" (Horricks, 1989, p.65).

Eric Dolphy, the person who inspired me to play the bass clarinet, still occupies a unique place in modern jazz. Notwithstanding his early death, he had a major influence on the development of freer forms of improvisation and was able to push boundaries, especially when playing the bass clarinet. He used a very large range on this instrument and employed an array of extended techniques, including microtonality.

2.5.2 Josef Horák

On March 24, 1955, a date which was incidentally also his birthday, Josef Horák became the first person to give a full-length bass clarinet recital. Asked to replace a sick colleague on bass clarinet in the Brno Radio Symphonic Orchestra, Horák immediately saw its potential as a solo instrument and started to develop the instrument and its techniques (Weston, 1989, p.130). This work led him to be called "The Paganini of the Bass Clarinet", as "Paganini produced unheard-of effects from his violin and so has Horák on his instrument" (Weston, 1989, p.130). Despite a tendency to play more transcriptions and arrangements later in his career, Horák undertook pioneering work for the bass clarinet. His efforts ensured the creation of new repertoire and brought about "a very important 'new direction' for clarinet in the early 1960s…the rise to prominence of the bass clarinet as a solo instrument" (Rehfeldt, 2003, p.158).

Horák founded several contemporary music groups: the Musica Nova Brno ensemble in 1961 (flute, bass clarinet, piano, and percussion), the Sonatori di Praga (with the same combination of instruments) in 1963 after he moved to Prague, and in the same year Due Boemi di Praga together with pianist Emma Kovárnová. Due Boemi di Praga later became his signature ensemble, and despite the restrictions caused by the Iron Curtain, he and Kovárnová were able to travel abroad as Czech cultural ambassadors. The duo was subsequently made an official Chamber Ensemble of the Czech Philharmonic Orchestra and was able to establish a 'business home' at Biberach-am-Riss in Germany. It is here, in the Kulturamt, that they were asked to teach chamber music for two days a week from 1969 onwards.

It was through his ability to travel that Horák could connect with the European avant-garde music scene. Bruno Maderna invited Horák to join the famous Kranichsteiner Kammerorchester in Darmstadt as early as 1961, and in 1968 Horák took part in the premiere of Karlheinz Stockhausen's *Musik für ein Haus* with, amongst others, trombonist Vinko Globokar and oboist Heinz Holliger. Horák was therefore well imbedded in the new music scene during the period in which he was actively researching new sonic possibilities.

The information which he gathered was passed on to composers keen on trying out the new sounds. One such composer, Václav Kučera, wrote *Duodramma* for Due Boemi in 1967. This piece, which is still performed regularly, makes use of several extended techniques: frullati, glissandi, vibrato (at different speeds), smorzando, extreme dynamics, and extension of the ambitus up to C♯5. Whilst

there are no specified microtonal pitches in this composition, the effects listed above do require embouchure manipulation. For example, the impetuoso opening starts with a G4 brought up by a lip glissando to A4.

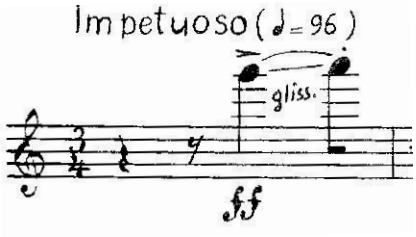

Figure 22: Kučera (1967/68, p.2), *Duodramma*, bar 1, bass clarinet part (G4 brought up by a lip glissando to A4)

2.5.2.1 Alois Hába

Another composition dedicated to Horák was Alois Hába's *Suita* op.96 (1964), written one year after Horák moved to Prague, where Hába also lived. This is thought to be the first work for the bass clarinet in which microtonal pitches have been used. Hába is primarily known for his microtonal compositions, especially using the quartertone scale, although he also used other systems such as third-tones, sixth-tones, and twelfth-tones.[25]

[25] "An important event was Hába's attendance of a lecture by Adriaan Fokker at the International Society of Contemporary Music in 1948; under the influence of this, he engaged in a long study of the fifth-tone (31-tone Equal Temperament) system [fifth-tone does not correspond exactly to a 31-tone, HB], finally using it in his 16th Quartet in 1967". (Battan, 1980, 'Alois Hába's Neue Harmonielehre')

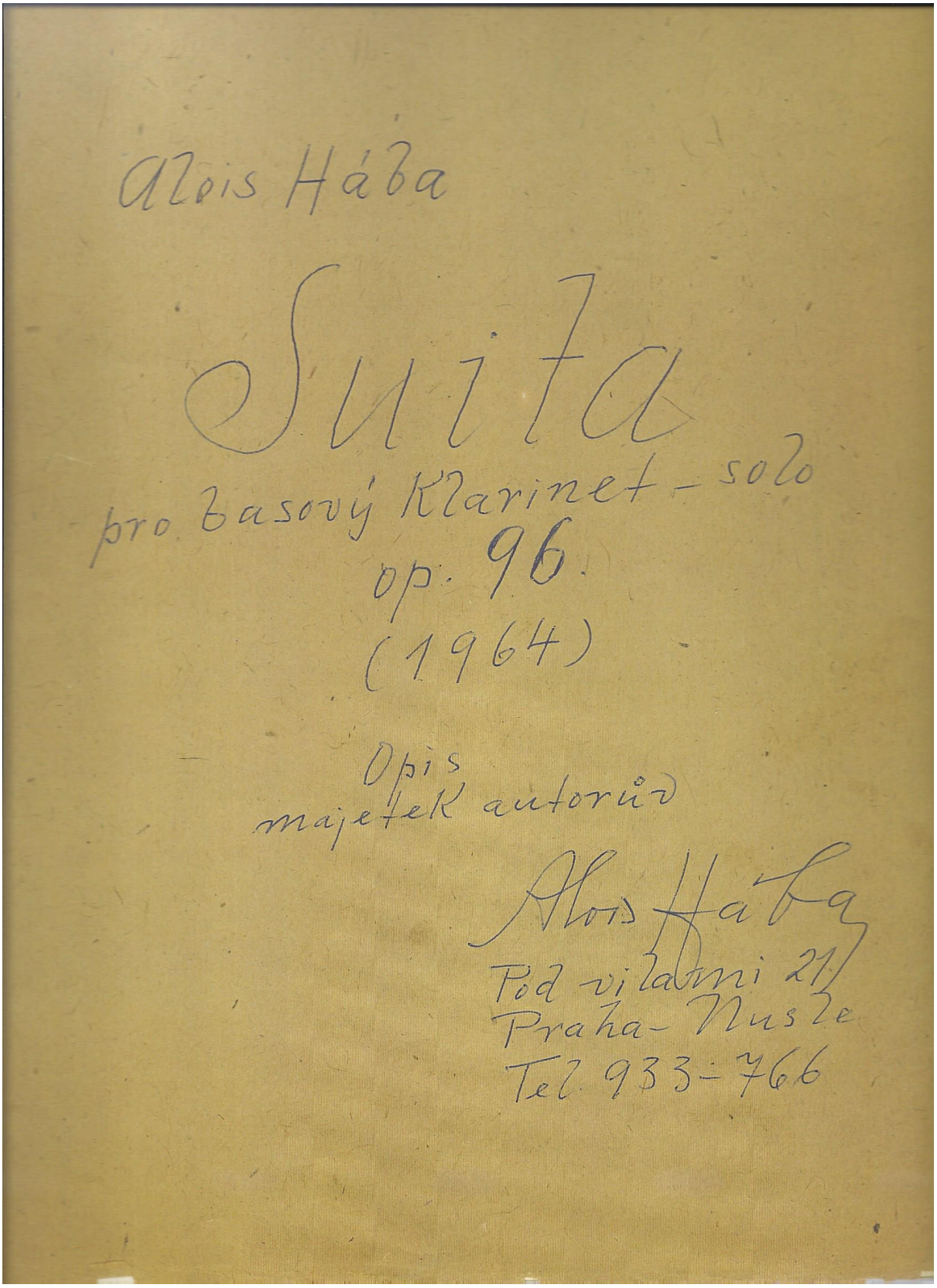

Figure 23: Hába (1964), *Suita* op. 96, title page of the manuscript

Considering Hába's importance as a composer and theoretician of microtonality, his use of microtonality in the *Suita* op. 96 is sparse and uniform. Interestingly, on each occasion in which microtonality is used, Hába raises the pitch by a sixth-tone. His use of this smaller microtonal step is not common. To notate the microtonal variant Hába uses '+', which indicates that the pitch has to be raised by a sixth-tone (2007, p.141).

In the microtonal passages of this work Hába always follows the same, uniform, process: juxtaposition of the semitone pitch and its sixth-tone microtonal variant, always raising the preceding pitch. There may be an advantage to the uniform process Hába applies: the listener can perhaps (more) easily hear and recognize the microtone in relation with the semitone pitches which precede or follow it.

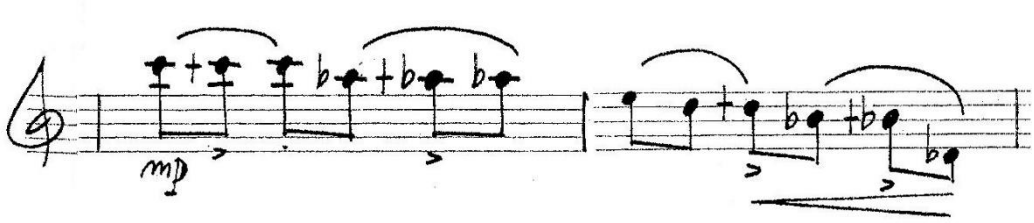

Figure 24: Hába (1964), *Suita* op. 96, second movement, bars 16-17

On his recording of the *Suita* op. 96 Horák does not appear to always completely follow the original score (Due Boemi di Praga, 2000, track 5). This is especially evident in the second and fifth movements, the only movements with microtonal writing, where he cuts out all the microtonal passages. As Horák did not document his work in either books or articles, the only documentation of his microtonal fingering patterns can be found in his personal scores. Whilst it may initially appear that he had not found appropriate fingering patterns for the required microtones, and had therefore made the decision to omit the microtonal passages, upon further investigation Horák's manuscript copy of the score does contain fingering patterns for the sixth-tones.

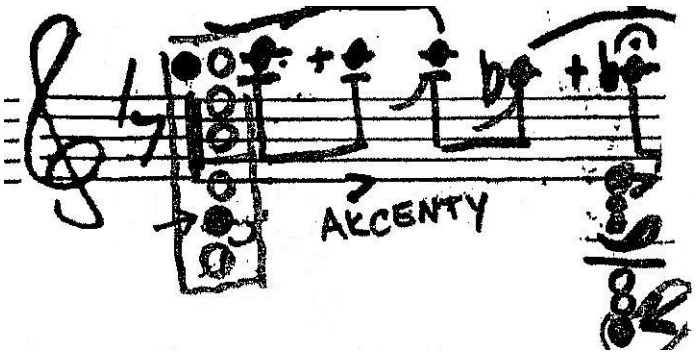

Figure 25: Example of Horák's fingering patterns for sixth-tones in bar 16 of Hába's *Suita* op. 96 (1964)[26]

This work by Hába is one-of-a-kind in Due Boemi's repertoire. In an interview recorded on November 21, 2016, in Prague (Video 8), Kovárnová states unambiguously that there were no other composers who wrote microtonally for them and that they had not encouraged composers to do so, because microtonality posed problems for which they did not have the solutions as she only had semitonal keyboards at her disposal.

Video 8: Interview with Emma Kovárnová, part one (November 21, 2016)

In a second interview (Video 9) Kovárnová elaborates on the musical impact of microtonality and states that for her, descending microtones work better as she believes that they have a bigger emotional impact than the ascending ones. It is therefore notable that in the only microtonal work written for Horák, all microtonal pitches used raise the preceding note by a sixth-tone.

Video 9: Interview with Emma Kovárnová, part two (November 21, 2016)

Although Kovárnová clearly states in Video 8 that the duo did not get involved in the commissioning or playing of microtonal works, she comments very positively on microtonality as a phenomenon and says that for her, microtonality

[26] This example is taken from Horák's own handwritten version of Hába's original score (in treble clef) and differs from Hába's score which does not contain a fermata.

adds to the musical expression, especially when the pitches are in a descending order. Preciseness is important to her, so she states that in order to play exact quartertones or sixth-tones a lot of training is required.

2.5.3 Harry Sparnaay

Harry Sparnaay started playing (jazz) tenor saxophone at the age of 13. When he presented himself with that instrument for the entrance exam at the Sweelinck Conservatoire in Amsterdam, he was met with disapproval: neither a saxophone class nor a jazz course existed at that institute in the 1960s. One of the clarinet teachers, Ru Otto, convinced him to change to the clarinet. Later, when Otto brought the bass clarinet into a class one day, Sparnaay was the only student who was able to blow it and decided that this would be his instrument of choice.

As has been discussed in section 1.3 'Guidelines for the performer', a relaxed and flexible embouchure is needed in order to produce a 'rounded' and 'open' sound. Sparnaay appeared to confirm the need for a relaxed embouchure in his interview with British clarinettist Pamela Weston, stating that playing the bass clarinet "was much easier for him than for those coming to it after years of a normal tighter clarinet embouchure" (1989, p.267). Weston believed that this was due to Sparnaay's background of jazz saxophone playing, which "helped give him the concept of sound and embouchure flexibility which made him into a master of the instrument" (1989, p.267).

In 1972 Sparnaay won the Gaudeamus competition with solo performances, and as a member of duo Fusion Moderne (with Polo de Haas, piano). The same year he was appointed professor of bass clarinet at the Rotterdam Conservatoire, and he played Italian composer Luciano Berio's *Chemins IIc* with the Rotterdam Philharmonic Orchestra.

A long bass clarinet journey followed, full of performing, teaching, researching, and repertoire building, all of which have been documented in his book *The bass clarinet, a personal history* (Sparnaay, 2011). The book also details many extended techniques, as well as over 700 compositions that were written for him.

2.5.3.1 Jos Kunst and Brian Ferneyhough

"For the bass clarinet there are major difficulties to be overcome when producing quarter tones. The instrument is not really designed for it" (Sparnaay, 2011, p.123). Although Sparnaay was very critical regarding the microtonal possibilities on the bass clarinet, two of the first solo pieces written for Sparnaay—Dutch composer Jos Kunst's *Solo Identity I* (1972) and British composer Brian Ferneyhough's *Time and Motion Study I* (1971-1977)—both contain microtonal pitches.

It is interesting to note that Kunst's composition uses sixth-tones, as did Hába's *Suita* op. 96. Although Kunst makes use of more microtonal variants than Hába, his use of microtonality in the piece is still limited to only four bars. Whilst Hába chose to raise a semitone pitch by only one sixth-tone, on two occasions Kunst uses sixth-tone steps to move between two semitone pitches. He does this between G𝄲2 and G♯2 in bars 31-32 (Figure 26) and between B𝄲3 and D♭4 in bars 67-68 (Figure 27).

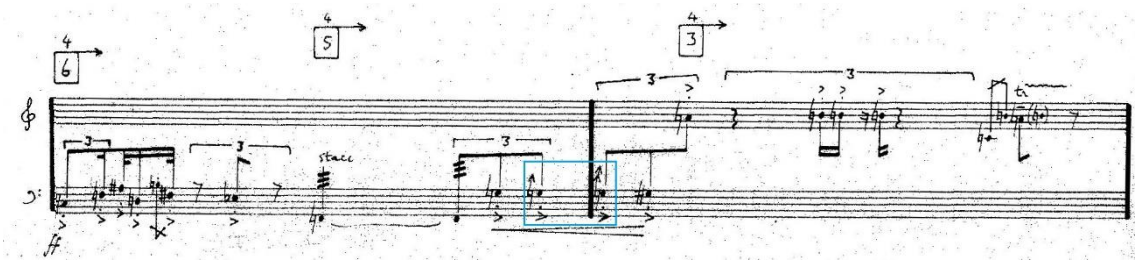

Figure 26: Kunst (1972, p.4), *Solo Identity I*, bars 31-32

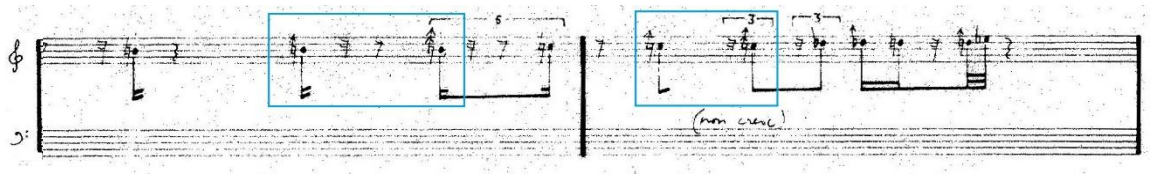

Figure 27: Kunst (1972, p.7), *Solo Identity I*, bars 67-68

Several recordings exist of this piece: the earliest recording is by Sparnaay (1978, side 1, track 1), another, by Barton Workshop co-founder John Anderson

(2003, track 2), and a more recent one, by Brazilian bass clarinettist Sérgio Albach (2016).

Sparnaay and Albach shared their fingering patterns for the sixth-tone pitches with me. Figures 28-31 compare the sixth-tone fingering patterns used by Sparnaay and Albach.

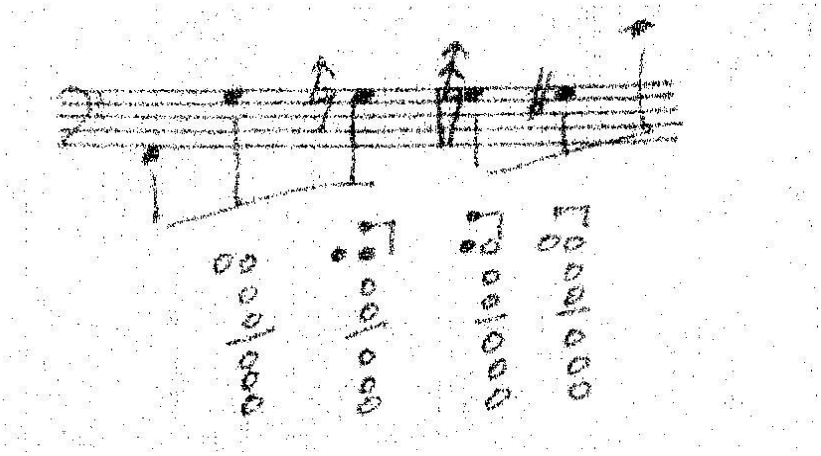

Figure 28: Sparnaay's fingering patterns for Kunst, *Solo Identity I*, bars 31-32

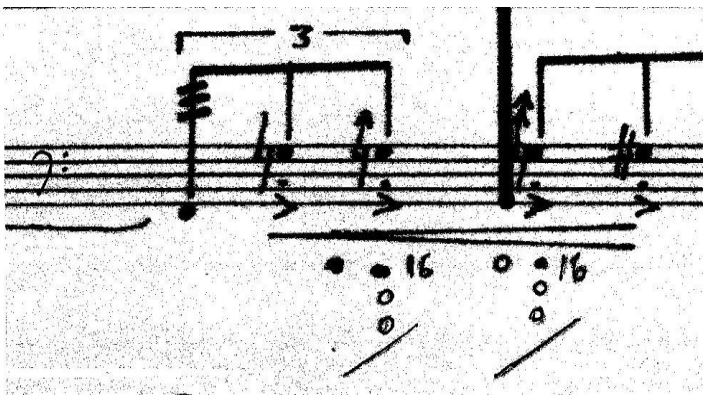

Figure 29: Albach's fingering patterns for Kunst, *Solo Identity I*, bars 31-32

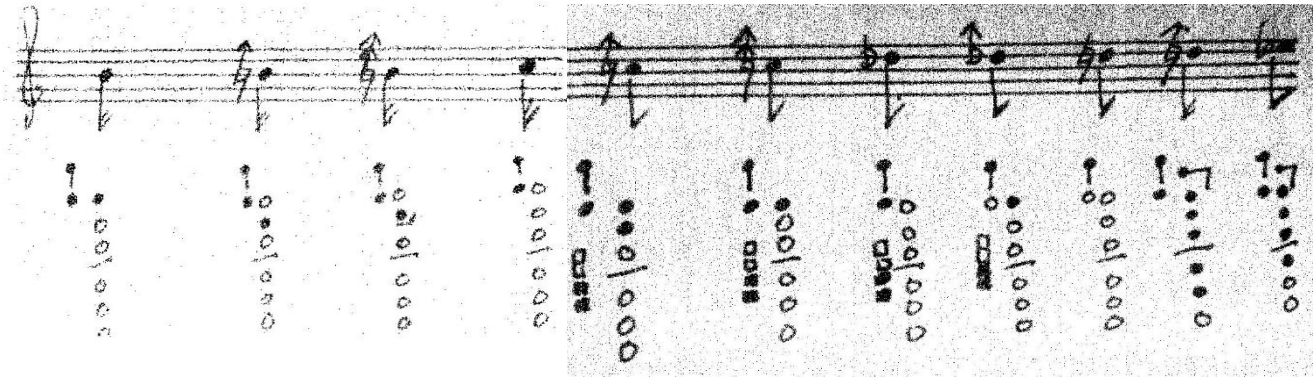

Figure 30: Sparnaay's fingering patterns for Kunst, *Solo Identity I*, bars 67-68

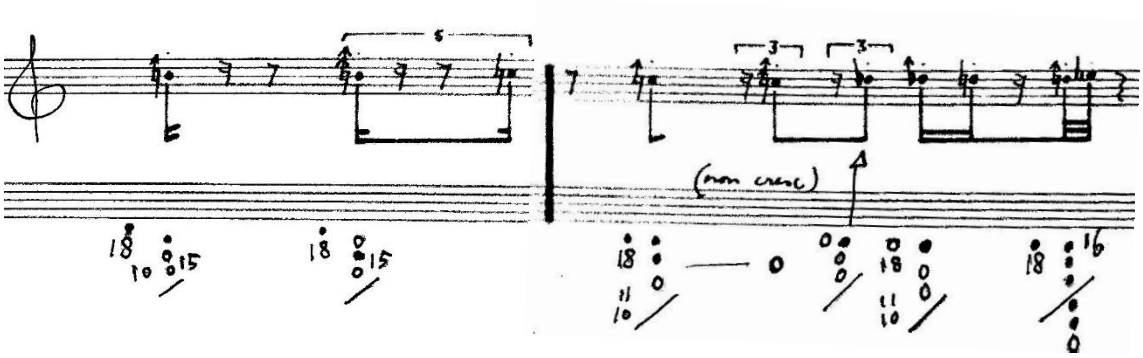

Figure 31: Albach's fingering patterns for Kunst, *Solo Identity I*, bars 67-68

It is notable that of the eight microtonal fingering patterns found in Figures 28-31 six are identical between the two performers. Comparing the suggested fingering patterns with the measured microtones in Appendices A1-F, four of the fingering patterns proved to be quartertone fingering patterns (G♯2, B♯3, D𝄲4, and D♯4). Of the remaining fingering patterns only one could possibly qualify as a sixth-tone: the shared fingering pattern for C𝄳4 (measured as C♯4 -31). The remaining fingering patterns are either closer to eighth-tones (for example, Albach's fingering pattern for B𝄳3, measured as B3 +22) or nano

tones (for example, Sparnaay's solution for the same pitch, measured as B3 +8).

Ferneyhough's *Time and Motion Study I* was completed just before the work's premiere in 1976 (H. Sparnaay, personal communication, May 4, 2017).[27] Various recordings have been made of this composition, including by Sparnaay (1989, track 6) and Scandinavian bass clarinettist Tommie Lundberg (1991, track 2).[28]

Whilst Hába and Kunst both chose to use sixth-tones, Ferneyhough uses quartertones. This microtonal interval has been more commonly used than sixth-tones. In contrast with Hába and Kunst, who use microtonality very sparsely in their solo pieces, Ferneyhough uses microtonality as one of the key components of his composition technique. For example, many of the notes in Figure 32 are microtonally altered, but they do not all move in step fashion from semitone pitches as Hába and Kunst have used microtonality.

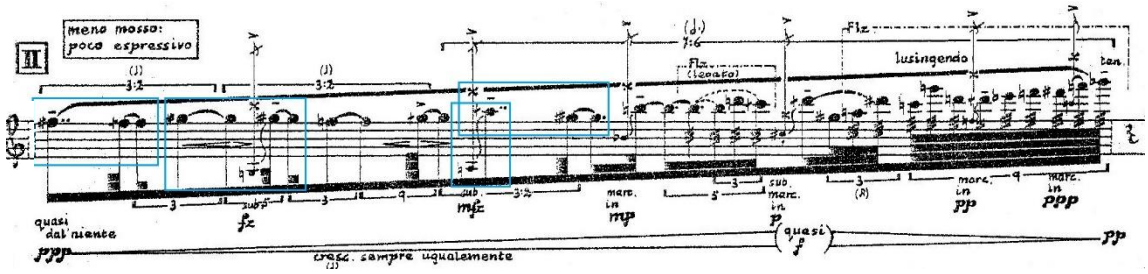

Figure 32: Ferneyhough (1971-1977, p.3, line 1), *Time and Motion Study I*, *meno mosso: poco espressivo*

The F♯3 (Figure 32) does move in a step fashion to the second note, F♮3, but the next microtonal step, between G♯3 and G𝄪3, is interrupted by a grace note on G♮1. Further on in the phrase, the quartertone step, A♮ to A♯, is dislocated by two octaves (A♮1 to A♯3). There is also direct movement between two quartertone pitches, A♯3 and G𝄪3.

[27] There is sometimes confusion regarding the year Ferneyhough completed the final score of *Time and Motion Study I*, as the front page of the Peters edition score gives 1971-77 as the dates, whilst the last page of the score states: "First version: Basle 1971; Recomposed: Berlin 1976/7" (Ferneyhough, 1977, p.8).

[28] Tommie Lundberg was Horák's only 'official' bass clarinet student.

In this piece microtonality is also used in combination with other extended techniques, for example in the last line of the score (Figure 33).

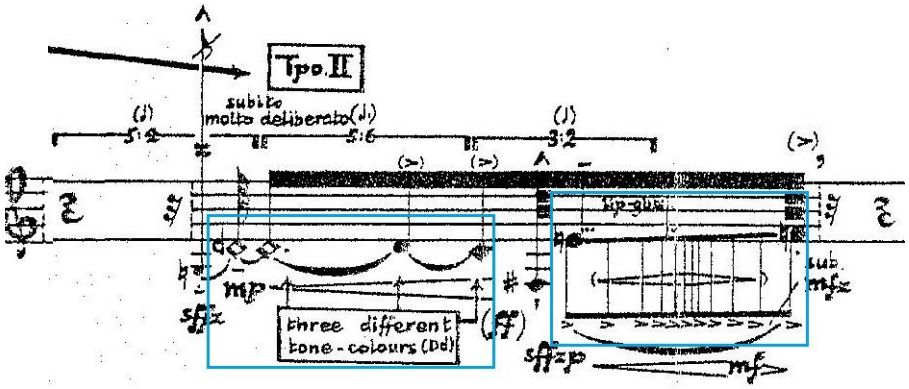

Figure 33: Ferneyhough (1971-1977, p.8, line 5), *Time and Motion Study I*

In the penultimate sequence of the piece (Figure 33) the composer asks for the three different tone colours to be played on a note which is already microtonally altered, D𝄲2. The desired change in tone colours will also bring nano pitch variants. The lip glissando in ten mini-steps between E2 and F2 (in the same phrase) relies on lower lip manipulation. Due to the keywork of the instrument there are not ten different fingering patterns available to raise the pitch towards F2. Any keys situated on the lower joint and pressed by the fingers of the right hand lower the pitch E2, rather than raising it. The availability of possible fingering patterns would have aided the performer in realizing the composer's wishes. The fact that Ferneyhough chose this effect between E2 and F2 may indicate that the composer did not have detailed information at his disposal concerning this aspect of microtonality.

In my point of view, the lip glissando might have worked slightly better without the smorzando effect, indicated by the marked accents. The musical idea could, though, have worked with the right choice of an overtone pitch, which could then be altered in mini-steps, using the root-overtone production system and generating nano tones through the use of additional keys (the subject of Chapter 5).

2.6 Summary and conclusions

Chapter 2 showed the development of the bass clarinet from a multiform low clarinet to the actual shape and keywork for which Adolphe Sax is mainly responsible. Sax added more keys to the instrument and invented a second register key. This allowed a much larger ambitus, improved the intonation, and offered alternative fingerings, paving the way—in the long term—for microtonality.

Important orchestral and operatic composers, such as Mercadante and Meyerbeer, later followed by Berlioz, Donizetti, Verdi, Wagner, Liszt, and Smetana, favoured the bass clarinet and used its full ambitus in solos and cadenzas. In solo and chamber music repertoire the bass clarinet is not used either extensively or exhaustively and the majority of composers tend to reduce the instrument's ambitus to a mere three octaves, starting on E1 as the lowest pitch (with the exception of Schoeck).

It is not until the 1960s that this situation suddenly changes, due to the pioneering work of Eric Dolphy, Josef Horák, and Harry Sparnaay. The bass clarinet 'revolution' they started has resulted in a whole range of new, interesting compositions, featuring the bass clarinet's extended techniques, including microtonality.

Both Horák and Sparnaay performed music containing microtonal elements at the very start of their respective careers. Compositions by Hába, Kunst, and Ferneyhough remain part of the instrument's core repertoire. Following these examples of microtonality in the 1960s and the 1970s, microtonal possibilities for the bass clarinet have increased. The quartertone microtonal system is today still the most commonly encountered. In the next chapter, quartertone playing on the bass clarinet will be scrutinized and elaborated upon.