An Expedition to technical secrets of clarinet playing
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Foreword

On 27th of October 2011, 7.55 PM, I sit down on a red chair in Stockholm's "Blue House". I'm at Stockholm's concert hall, and about in five minutes Martin Fröst will get on the stage to premiere a new clarinet concerto, Concert Fantastique, which has been composed for him. At 8.30 PM I’m elated by what I have just heard. Together the composer Rolf Martinsson and clarinetist Fröst have created something unprecedented with that "black pipe"! For me, it's extremely fascinating that still, one time after another, new ways to play the clarinet are found. Thus, I argue it to be probably the only classical instrument which power has yet to run dry.

In the post-concert euphoria I get an idea and a topic for my written thesis: I want to deepen my skills and explore new techniques of playing the clarinet. The motive of this essay is thus in a large extent selfish – I wanted to broaden my knowledge and expertise on the new techniques of clarinet playing. At the same time I hope my thesis will potentially be of help to composers and other clarinetists, too, who want to start an expedition of their own to the instrument's technical secrets. I consider it very important for musicians to master the playing techniques of also their contemporary music as multifacetedly as possible. It's essential for musicians to create something new and not only conserve the old.

In my text I don't discuss the basic playing techniques of clarinet, so it would be beneficial for the reader to have familiarized themselves with these already beforehand. As I already mentioned above, the number of new techniques for the clarinet, let alone the different combinations of these, is vast, and going through them all would be an almost impossible task. Kari Kriikku, Martin Fröst, or any clarinetist for that matter would probably have come up with another new way of playing the instrument meanwhile, if I tried to cover the topic impeccably while writing this. As a result, I've decided to concentrate on the most crucial techniques, constantly appearing in new clarinet pieces. The first part of the essay consists of discussing monophonic techniques, while the latter part is focused on polyphonic techniques. The text is composed of describing the technical execution of different techniques, in addition to my own comments on the subject. As the frame of my expedition I've used the doctoral thesis of
1 Monophonic new techniques

1.1 Vibrato

_Vibrato_ cannot quite be counted as a novel clarinet technique, but recently its use in art music has notably gone up, which is why I address it as a new playing technique. Earlier, before the collapse of musical boundaries, vibrato was merely associated with jazz. In art music it has been used by some British clarinetists. Although many professional clarinetists still denounce the use of vibrato, it's nevertheless been adopted to classical music, too, by such musical cultures as jazz and ethnic music. Also, the use of vibrato has increased because the idea that there would be only one instrument among all bowed string and wind instruments, which techniques didn't include vibrato at all, has become debatable.

Using vibrato in clarinet playing has been seen as a bit ignoble manner. It has been thought that a clarinetist who uses vibrato is hiding his or her poor basic tone behind the vibrato. _Lip vibrato_ and _diaphragmatic vibrato_ have been seen as the most suitable vibrato types for art music.

Allowing the use of vibrato or its renunciation has strongly been a question of school of thought. In some countries it's used very commonly, but most clarinetists who concentrate on art music will still refrain themselves from using vibrato, although they master this technique very well and, should it become necessary, can colour their music with the help of it.

I myself identify with those clarinetists who use vibrato very rarely. I still think, however, that properly used this vibrating technique suits well into clarinet music. I want to emphasize the words "properly used" in this opinion. Vibrato should be used with consideration, preferably rarely rather than too often. Neither do I think it should be used as a means to disguise weaknesses in the use of tone or problems in intonation.
1.1.1 Vibrato on the note

Clarinetists often use vibrato freely, improvising its use in situations of their own choice, but when a composer has meant the clarinetist to use vibrato, he or she has marked it distinctly on the note. As notation of vibrato, a wavy line or verbal instruction have become most common. In some occasions the composer might particularly mention that he or she doesn't want vibrato being used. In such instances, they mark the note as non vibrato.

1.1.2 Smorzato

*Smorzato* or *smorzando* is an intense, pulsing vibrato in which the pitch as well as volume change. Smorzato consists of pulses which are achieved by moving one's chin up and down while playing. Executing smorzato succeeds best in small dynamics. In loud dynamics the air pressure makes the tone break. The best dynamic for smorzato is thus achieved in nuances smaller than mezzoforte.

In the following examples I introduce two alternative means of shifting to smorzato.

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**Example 1 smorzato** (in Paavo Heininen: Discantus II). In this example the shift to smorzato is made during one tone, from two fingering's alternation.

Fingering suggestion for alternation of F#5.

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**Example 2 smorzato.** This example is also from Heininen, Discantus II. Here the shift to smorzato is made from tongue repetition of H#5.
1.1.3 Key vibrato

Execution of key vibrato happens quite differently than of the vibratos explained above. Finger vibrato is kind of a trill, and thus it's also executed playing a trill with such a key or finger-hole that affects either only the colour of the basic tone, or transforms its pitch a quarter of a step at most. In clarinet music key vibrato can be seen as a "new playing technique", but flutists have used it already since baroque. Key vibrato is usually marked on the note with the same thick wavy line as a trill, along with verbal instruction (key vibrato).

![Example 3 Key vibrato. This fragment is from a clarinet concerto by Kai Nieminen. The composer has marked a wavy line above the melody, which usually marks a vibrato. In addition to the wavy line there reads "Key vibr." on the note, so the player knows that he or she is to play key vibrato instead of normal vibrato. So, when the composer wants key vibrato, they should always indicate it with a verbal instruction also. The names of the notes marked below the stave refer to the keys with which the key vibrato is in this case done (Raasakka).](image)

1.1.4 Comments on vibrato

In my opinion vibrato should be practised very minutely. The player should master the vibrato so well that he or she can control its rate and amplitude extremely elaborately by himself. When the different types of vibrato are mastered well, vibrato doesn't sound like just a random fluctuation of sound. Thus the player should practise vibrato with a metronome, and at the same time listen to and analyze the intonation of the vibrato tone. The vibrato should settle around the main tone, not below or above it.
1.2 Microtones

Micro intervals are used quite a lot in new contemporary music. This technique is achieved via deflections in the tempered 12-tone chromatic scale. Micro intervals are changes in the pitch smaller than half steps. By using micro intervals, for example a 12-tone chromatic scale can be divided into 24 segments, and so a quarter-tone scale is born.

Micro intervals do not have a common notation, but one recommendable and simple, at least in Finland already rather established character set is presented in the following example (Raasakka, Aapelin uudet soitteet p. 56).

Example 4. Recommendable micro step markings. Fifteen variants of A5 from lowest to highest. A 3/4-step fall is marked with a twin flat symbol, visible on the left side on the picture, and a 1/4 fall with a mirror image of the flat symbol. A 1/4-step lift is marked with a cross, in which there's only one vertical line. In a 3/4-step sharp symbol there are three vertical lines. A lift or a fall smaller than a quarter-step is marked as an upwards or downwards pointing arrow in front of the note. The arrow can be connected to the natural, sharp or flat symbols. A slight fall or rise can me marked with an arrow above or below the note. These are both more like reminders of the needed corrections in intonation than markings of actual micro intervals (cf example 19b, Nuorvala; Raasakka cf example 20).

In my opinion micro intervals are an extremely good way of invigorating music. The use of micro intervals adds to the attractiveness of music tremendously. The listener's ear sort gains more grasping surface and this keeps the listener intrigued. In my opinion micro intervals create an audio scene in which the clarinet sounds more like an ethnic instrument and not so much like a modern instrument. It's exactly like this kind of a mystic instrument that can be heard in the example piece I've chosen, On a Distant Shore (2002) by Karin Rehnqvist.
Micro intervals for clarinet are achieved by changing the embouchure, but the best way to accomplish for example a quarter-tone scale is to use a specific fingering for each quarter tone. Detailed fingering charts can be obtained at least from Burke (1995) and Rehfedlt (1992). It's advisable to use fingering charts when beginning to familiarize oneself with micro intervals, but practice has nevertheless taught me that every player needs to find the right fingerings for him or herself, such that also fit their own instrument and playing technique.

1.3 Pitch alteration

Alterations in pitch have not been a part of the classical-romantic art music tradition in clarinet playing, but the same way as vibrato, also different alterations, *glissando*, *portamento* and *pitch bend*, have little by little migrated from jazz and folk music to art music, too. Approximately from 1920 on different pitch alterations have begun to show in (art) clarinet music, and today they are very commonly used techniques indeed.
The middle and high registers of clarinet are quite favourable for making pitch alterations. The low register of the instrument, though, is not very favourable for glissandos, but some, although rare players can achieve the alteration in the low register also. However, it is fairly easy to make short glissandos from a tone to the next, both down and upwards, in the low register.

1.3.1 Glissando

A stepless alteration from a pitch to another is called glissando. With clarinet, glissando is done with fingers and embouchure. Fingers are slid away from the tone holes, altering the pitch simultaneously with the embouchure and changing the position of the mouthpiece. Glissando is much easier to play upwards than downwards. However, in the middle and high registers a downward ”embouchure glissando” is fairly easy a technique to execute. Glissando is marked with a straight, solid line that connects the ends of notes.

Example 6 Glissando. This example is from the work Puro, composed by Jukka Tiesuu and often performed by the clarinet artist Kari Kriikku. Glissando D5 – G♯6.

1.3.2 Portamento

A means of expression familiar to opera singers, portamento or stepwise transition, somewhere between scale passage and glissando, also belongs to the contemporary techniques of clarinet playing. With clarinet, portamento is achieved by mixing – according to different situations – chromatic scale, glissando and wide vibrato. Portamento effect is also attainable through playing a quick quarter-tone scale.
1.3.3 Pitch bend

A short term and concise alteration away from a tone is called a *pitch bend*. Usually, a bend is only the size of a micro interval. At largest it can be the size of a semitone. Pitch bend always intertwines around some basic tone, unlike glissando, which is an alteration from one tone to another.

**Example 7 Portamento.** In this example portamento is played with the help of trill keys. On the higher staff there's a playing instruction (I added the fingering of trill keys to the picture) and on the lower staff it has been notated “audio scene”. Example 7 is from Carpe Diem!, a composition by Jouni Kaipainen.

![Example 7 Portamento](image)

1.4 Frullato

*Frullato* (German Flatterzunge, Engl. flutter tonque), one of the basic techniques a modern clarinetist should master, is the oldest of the new playing techniques. Richard Strauss used frullato already in 1897 in his piece *Don Quixote*. In *Vier Stücke für Klarinette und Klavier*, published in 1919, *Alban Berg* (see example 9) uses the frullato

**Example 8 Pitch Bend.**

Herman Rechberg: Alovlar. In bars 35 and 39 the composer has written a pitch bend. The bend has been marked with a curly line and a quarter-step flat or sharp symbol.

![Example 8 Pitch Bend](image)
technique in several occasions. An actual frullato can be executed in two different ways, which are both based on rolling the tongue. The first and more common way is to roll the tip of the tongue against the alveolar ridge, like in the Finnish r-sound. The second way to play frullato is to roll the back of the tongue, like in the French r. In high register, executing frullato might be difficult, in which case a frullato-like effect can be achieved by singing simultaneously while playing (see chapter 2.6).

Example 9 Frullato. In this composition by Alban Berg, frullato is marked with a traditional "tremolo" symbol and a German text Flatterzunge. Often in place of the tremolo symbol there can also be the letter z. Usually it's good to give a verbal instruction also, as a confirmation.

2 Polyphonic techniques

Polyphonic techniques produced by the clarinet can roughly be divided into two different categories: multiphonics and colla voce. Multiphonics are tones produced via playing by the instrument, whereas colla voce is a combination of the player's own singing voice and the sound of the instrument.

2.1 What are multiphonics?

When a clarinetist produces two or more pitches simultaneously, the result is called multiphonics. The audio scene of a multiphonic is quite different from the instrument's own basic sound. When playing a multiphonic, the clarinet's tone is in an unstable interstice mode. The produced tone isn't really a multiphonic but more like a musical colour-phenomenon.
Thousands of different kinds of multiphonics can be found for the clarinet. Some of the multiphonics are clearly two- or three-tone "chords", while others are kind of tone columns, from which single pitches can be difficult to tell apart (Raasakka 2005, 74).

By modifying the playing technique, every tone of the clarinet produced with a normal fingering can be transformed into a multiphonic. You could call these broken tones (Raasakka). Another way to play a multiphonic is to use special fingerings, especially sought for multiphonics (*Multiphonics proper, see p. 14*).

2.2 Broken tones

2.2.1 Broken low tones

As I already mentioned above, every tone of the clarinet can be broken down into a multiphonic, but the tones of the instrument's lowest register suit best for playing these sounds. Usually, a tone is broken by pushing your lower chin slightly down and forward. When this is done, the control of the air column becomes disturbed, the tone is broken down and a block-like, strongly discordant tone column forms above the basic tone. These multiphonics function best in loud dynamics. In small dynamics, controlling them is extremely difficult and even if the player tried to play the tones in question quietly, their control might suddenly and unwillingly run off to rather great volumes. A low tone can also be broken down so that only the high register tones of the multiphonic are audible. Broken low tones are best accomplished through the clarinet's E3 and F3's fingerings.

Example 10 Broken low tones. Examples 10, 11 and 12 are from the composition by Jukka Tiensuu, Puro. In the example above, in bar 4 we see a broken low tone E3. The "M" above the note marks a multiphonic. As confirmation, the composer has also wanted to mark the tone's fingering symbol here.
2.2.2 Multiphonic glissando

Multiphonic glissandos can be found frequently in the contemporary clarinet music. In my opinion, the audio scene of a broken glissando resembles greatly the sound of a didgeridoo. Multiphonic glissando is a kind of a modification of broken low tones. A tone is broken down the way I explained in the previous chapter, but the multiphonic glissando that forms on the low tone is achieved by changing the position of one's tongue and the force in which the player's lips are pressed together. An upward orienting glissando is achieved by sliding the position of the player's tongue from that of a Finnish vowel "o" to "i", simultaneously pressing lips harder together. If one wants to play a downward glissando, the changes are made in a reverse order.

![Multiphonic glissando example](image)

**Example 11 Multiphonic glissando.** In this example the composer has expressed his will for the clarinetist to play a multiphonic glissando with a curvy, upward turn making line. In my opinion, in cases like this it would be good if the composer marked the note also with an "M" (multiphonic). As a result the player would know for sure that he or she is to play a multiphonic glissando.

2.2.3 Broken high tones

It's also possible to form downward multiphonics from the high register tones (C#6 to G#6). A tone column is in this case formed below the fingered and at the same time highest tone. A broken high tone is achieved by lessening support and / or loosening the embouchure.
2.2.4 From normal tone to broken tone

Instead of outright playing a broken tone, a technique can also be used where the clarinet's normal tone is gradually transformed into a multiphonic. This kind of sound could be compared with a tone produced by the bowed string instruments' sul ponticello -technique (Raasakka p. 79). This is an extremely efficient way to colour one's music from a soft tone to glaring bright.

2.3 Multiphonics proper

The majority of multiphonics of the clarinet are multiphonics proper. In them, for each multiphonic a special fingering that differs from the normal single-tone fingerings, is sought. What do these fingerings have in common? While overblowing, from the middle of the air column vibrating inside the clarinet, the register key sound hole is opened. When this happens, a single, higher partial tone becomes audible. If, though, an other than the register key is opened in the
middle of the air column, the air column tries to produce several pitches simultaneously, and with a proper embouchure, the result is a multiphonic. (Raasakka p. 80.)

As the basis for multiphonic fingerings, some basic fingering is usually used. The basic fingering is transformed by opening a key or finger hole, and thus interfering with the basic tone of the clarinet to achieve a multiphonic.

**Example 13a)**

![Example 13a](image)

**Example 13b)**

![Example 13b](image)

**Examples 13a and 13b.** An expedition to the world of multiphonics by Mikko Raasakka. In my opinion, the studies by Raasakka should be gone through by every clarinetist so as to learn to perceive and become acquainted with the behavior of multiphonics. In example 13a, it's tested what kind of multiphonics are produced by adding an open sound hole to the basic fingering of A3. In example 13b, Raasakka has studied multiphonics in which to six basic fingerings, an open e-flat - key has been added.

2.4 Comments on multiphonics

Practising multiphonics should be taken as seriously as practising in general. For a clarinetist to really be able to master multiphonics rigorously, the player has to spend a lot of time with them and really know how he or she is to change the playing technique to make the multiphonic sound. They must also know in advance how the sound behaves when the multiphonic starts to speak and what the proper position of the
embouchure and the direction and volume of the blow are. When a multiphonic has started to speak, the player must be able to keep it together for a desired time. Playing a mastered multiphonic is very challenging and even the slightest changes in the technique may destroy the multiphonic. Thus, it's important to keep this in mind, especially keeping an eye on performance situations, when we may easily make changes to our technique unwillingly. When a player knows exactly how any changes in technique affect multiphonics, it's easy for him or her to correct potential errors also while performing. In my opinion, it would be good to start practising multiphonics with multiphonics proper. These can be found more easily, and it's easier for the player to approach them in the beginning because these tones have special fingerings of their own. When the player knows how playing multiphonics should feel like, it's easier for him or her to move on to playing broken tones.

2.5 Tone differences in multiphonics

In chapters 2.2 and 2.3, multiphonics were approached mainly according to their different techniques. I divided them into two categories (broken tones and multiphonics proper) and this categorization was based primarily on differences in playing techniques. Multiphonics can also be divided into four groups based on their audio scene (Raasakka). In my opinion multiphonics create very strong effects into compositions and this is why the composer should be most ably aware of the different tone types of multiphonics. After all, for the composer it's probably most important what something sounds like, not how it is achieved.

2.5.1 Rich multiphonics

In rich multiphonics, three to five independent pitches are audible, and when wanted, these can also be played as distinct tones with the same fingerling just by changing the embouchure. The dynamic scale of a rich multiphonic is wide and the tone fairly rich, but for many listeners not necessarily pretty. The multiphonics in this group are also "practical" because they start to speak rather effortlessly.
2.5.2 Aggressive multiphonics

The multiphonics in this group are very piercing in tone, and sound rather rugged. Aggressive multiphonics are difficult to play silently. In the multiphonics in this group, the tones are clustered and it's difficult to hear which tones are actually playing.

In these multiphonics there's often a swift fluctuation audible. This is because some of the intervals that belong to the multiphonic are not in pitch. Broken low tones belong mainly to this group (Raasakka p. 83).

See examples 10, 11 and 13.

2.5.3 Soft dyads

There are unfortunately only a few soft dyads there, but composers still use them relatively often. In these multiphonics, there are only two tones which are an octave apart at most. It's too bad that soft dyads can only be played in small dynamics, but on the other hand it's because of this that their beauty becomes so distinguishable. These multiphonics cannot be played loudly because if they are, one of the twin tones ceases to sound.

Example 14 Rich multiphonics. In this example there are four subsequent rich multiphonics. The segment is from a piece by Jukka Tiensuu, Beat. Obs. The composer has marked fingering suggestions on the note.

Example 15 Soft dyads. These multiphonics are from a solo cadence in Puro by Tiensuu.
2.5.4 Bright dyads

There are also only two tones in *bright dyads* and the interval between these two notes is greater than an octave. The timbre of bright dyads is bright and clear.

![Example 16 Bright dyads. The middle one (F#4 and C#6) of the bright dyads in this example appears i. a. in a piece by Elliot Carter, Gra.](image)

2.6 Multiphonic notation

As with many new techniques, the notation styles of multiphonics vary as well. Some composers may use markings on the note to indicate that the player should use a multiphonic (M) in the section in question, but the composer leaves the player an opportunity to choose for themselves what kind of a multiphonic is actually chosen. On the other hand, other composers make particular markings to indicate what tones should be audible in the multiphonic (see example 14). They may also give a fingering suggestion (see example 14), which they have most likely chosen together with the clarinetist. I myself like it when the composer has given as precise an instruction as possible on the desired multiphonic. Of course the player can modify and seek fingerings that suit them best themselves, too.

2.7 Colla voce

When a composer has marked a note as *colla voce* or *con voce*, they mean that the player is to sing, hum or yell simultaneously with the normal playing technique. This technique is of course limited by the qualities of each player's vocal range and singing voice. The technique in question is also made challenging by the difficulty to make one's voice carry through the instrument, and thus one's singing voice needs to be quite strong.

Depending on purpose of use, colla voce can be either defined or undefined. Often colla voce may be used to grow intensity, and thus the sound gains a kind of roughness. I,
however, consider it very likely that this "singing a MELODY" while playing will become more popular. In a cadence in the clarinet concerto by Rolf Martinsson I mentioned in the foreword, Martin Fröst sings a clear, distinct melody, simultaneously accompanying it with his instrument.

Example 17 Colla voce. Colla voce -effect in Exaltè by Olli Koskelin. The clarinetist yells as high as possible while playing H6 (Raasakka p. 88).
The epilogue of my work is written only and solely for this written thesis. I've placed all the facts in the actual part of the study. The epilogue merely contains my own, general discussion about the subject, which in my opinion doesn't really help anyone who wants to get to know the new ways of playing the clarinet. In my opinion this is the case because every musician is an individual with one's own gifts, strengths and shortcomings. My reflections may come in handy if you have a similar problem as I, but I think it's pointless for a clarinetist who's just beginning to familiarize oneself with new ways of clarinet playing to read of issues and alternative ways of executing the techniques before first trying to familiarize oneself with them properly. Hence, I think that if you are a clarinetist and getting to know for example multiphonics for the first time, go directly to section 2.1., Multiphonics. After you've got acquainted with the playing technique in question, you can return to this final chapter and maybe get some assistance here. To sum up, my opinion is: don't adopt others' problems and don't think of things as problems, but instead learn to find a solution to each issue you encounter when playing before they turn into problems.

Of the monophonic techniques, all but vibrato are techniques defined beforehand by the composer for the player. In my own opinion, sometimes, though rather rarely, the clarinetist may also place a glissando (as well as a bend) onto a point of their own choice. If at some point of the piece you want to play a glissando, consider carefully the following: at which point you want to place it; make sure not use this technique too often and; if you decide independently to use glissando, always do it very assertively, so that the listener knows you're certain about the technique and stand behind your interpretation. Also vibrato is to be used with care and consideration. My own experience as a clarinetist and an experienced listener of clarinet music is that vibrato should rather be used rarely than too often. I myself play with quite strong reeds because, in my experience, the quality of the tone is better that way – producing a vibrato is, however, a bit stiffer than it probably would be with a softer reed. I feel that my vibrato isn't yet of the best quality and that I should continue to work on this technique to make it sound smoother.
A glissando placed in a good register is fairly easy to execute with a clarinet. However, there may be great differences in the quality of the glissando, and thus I want to try and improve the quality of my glissando in the future. My goal and ambition is to achieve a truly stepless glissando.

The oldest of the new techniques, frullato, isn't nowadays that much of a challenge for me anymore. However, a frullato played in the high register may still sometimes be challenging to produce. Usually I'm able to achieve the wanted outcome also with the high register frullatos when I just practise more and learn to recognize how each tone should feel in my mouth.

I would still like to mention the following about microtones. Quarter-step sharps and flats are very small changes in pitch, and thus determining the true pitch of the microtone is especially challenging for a woodwind instrument player in particular. It's difficult for the player to make a difference between a quarter and a three-quadrants step. When practising, the clarinetist should of course try to achieve as precise intervals as possible, but it's similarly very important to keep in mind that the player makes a wide enough micro interval transition so that the listener undoubtedly understands that the clarinetist is playing a microtone and not just a tone that is out of pitch or a generally bad-quality tone.

Also polyphonic techniques such as multiphonics are special instructions given by the composer that the player should follow and execute. Sometimes the clarinetist may intensify the piece him or herself by adding a colla voce at some point of the piece. This "singing while playing" has proven very difficult for me and I haven't yet been able to execute this technique successfully. When trying to produce a colla voce -effect I lose the basic sound of my instrument. Similarly, also a good singing voice is difficult to produce while playing. It can also be noted that each player's singing voice and vocal range set their own limitations for producing colla voce.

While studying multiphonics I noted that their playability can be influenced with different reeds. I also noted that some multiphonics are easier to execute with a softer reed, but can most definitely be played with a stronger reed also. "Finding" a multiphonic with a strong reed may be more difficult, but in my opinion the result
sounds better. I'm also of the opinion that a clarinetist shouldn't change his or her playing style or equipment too much because of new techniques because the so called standard level of playing mustn’t suffer from these techniques. Thus, if you're normally playing with a strong reed, don't change to a softer one to make it easier to play for example multiphonics because the transition to a softer reed would fairly likely produce a worse basic sound. Of course it's "allowed" to temporarily change the technique, and thus it's very good if the player is able to be flexible - but you should always be able to return to your own, strong standard level of playing.

I strongly think that not one of the new playing techniques is more significant than the other. It's because of this that I haven't wanted to place any technique above another. An optimal situation would thus be that I, along with other clarinetists, would master all the techniques with equal skill. One of the goals of my work has been to encourage clarinetists to approach and grasp all new techniques without prejudice. My hope is that clarinetists in general would manage to include training contemporary techniques into their own training routines.

_**Turku 20.4.2012**_

_Tuomas Takala_
BIBLIOGRAPHY


(Sound) Example 7, Kari Kriikku and Avanti! Chamber Orchestra

(Sound) Examples 11, 12 and 15, Kari Kriikku and Finnish Radio Orchestra
12.12.2011 Final Exam Concert

Master of Music, Performance - Classical Music Orchestral, Clarinet

Program:

Debussy, Claude: Premiere Rhapsody
Stravinsky, Igor: Three Pieces for Clarinet Solo
Poulenc, Francis: Sonata for Clarinet

Clarinet: Tuomas Takala
Piano: Erik Lanninger