

a r c h i n g

amplified cello, amplified tools, electronics

Malin Bång

Malin Bång

a r c h i n g

amplified cello

contact microphone attached to the frog of the bow
contact microphone attached to the body of the instrument

amplified tools

wooden plank

saw

rasp

file

gouge

marker

hand

contact microphone attached to a wooden plank
condenser microphone for close up amplification of tools

electronics

sound files in stereo

Duration: 10'

Commissioned by Thomas Liljeholm, through the award "Musikens Möjliggörare"

by the Swedish Composers' Society

Composed for and in collaboration with Umeduo;

percussionist Erika Öhman and cellist Karolina Öhman

World premiere: Umeduo at IDKA, Gävle on November 11th, 2013

More information on performances: www.malinbang.com and www.umeduo.com

Copy for perusal. This music is copyright protected.

Performance notes

arching

Archiving utgörs av en dialog mellan cellon och de verktyg som byggde instrumentet. Att mejsla ut en brilliant och balanserad klang är det övergripande målet under hela instrumentbyggerprocessen. Men långt innan cellon är ett färdigt instrument genererar den en mängd intrikata ljud som uppstår i mötet mellan trämaterialiet och de noggrant utvalda verktygen. Målet har varit att fokusera på ljud från verktyg som används i processens olika skeden och utforska det breda spektrum av klanger och gester som möjliggörs när cellon interagerar med rörelser från sågar, raspar, filar och håljärn.

General

Microphone types and placement



Schertler DYN contact microphone

Cello bow microphone

The contact microphone (Shertler DYN-E used at the premiere) is attached to the back side of the frog, you will have to slightly adjust the normal position of the finger tips of index finger, middle finger and ring finger. The cable points diagonally upwards to allow free movement of the bow in all playing techniques.

Cello resonant body microphone

A contact microphone (Shertler DYN-C used at the premiere) specifically made for the resonant body of the cello is attached to the top surface of the body, beside the start of the tailpiece on the side of the lowest string, see photo below.

Wooden plank microphone

A contact microphone (Shertler DYN-E used at the premiere) is placed at the upper right corner of the plank, on the flat side. Make a sound check with the saw and the rasp, and adjust the equalization at the mixing desk by cutting some of the bass register until you find a dry, crispy and as realistic presentation as possible of the sounds from the tools.

Tools microphone

In larger concert halls an extra condenser microphone is placed close to the plank, directed from above, to enhance the details from all tools.

Notation

Staves

Cello:

The right hand actions are notated on the top staff.

- a four line staff shows the four strings of the cello, from the bottom line (C) to the top line (a).
- a two line staff shows the area from uppermost third part of the fingerboard (the bottom line) to the bridge (the top line), see photo below. The changes of bow position are interpreted graphically with these outer points as guide lines.

The left hand actions are notated on the lower staff.

- a one line staff shows actions such as damping all strings and tapping the instrument body in different ways.
- an ordinary five line staff is used to show precise positions of glissando actions.

Tools:

The right hand actions are notated on the top staff.

The left hand actions are notated on the lower staff.

Electronics:

The bottom staff shows the electronics, notated on a two line staff, where the bottom line indicates the softest dynamics, with a gradual raise of dynamics until the top line which indicates the loudest dynamics.

Cello



range of the 2 lines staff notation

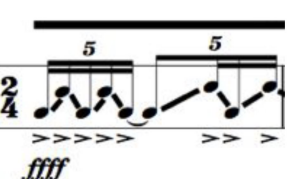
position of resonant body microphone

Playing techniques

vertical bow

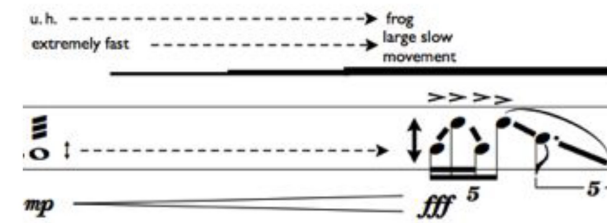


Move the bow firmly with a horizontal angle to the strings, back and forth along the strings. The vertical bow can be notated on four lines, in this case the bow motion takes place at ordinary bow position, in between the fingerboard and the bridge. When the bow needs to move in longer gestures, it is notated on the two lines' staff, showing gradual motions towards the bridge or towards the 2/3 of the fingerboard. For the best control of the vertical bow motion, hold the frog in a fist grip, as if you are holding a bike handle.



scratch noise

The scratch noise appears often together with the vertical bow. Follow the thickness of the black lines above the staff to determine the amount of scratch and the overall dynamic. The scratch noise timbre is thick and heavy and should mix well with the sound of the saw and the rasp. Adjust the pressure and speed of the bow to achieve the character of the sound that fits the context.



circular motion

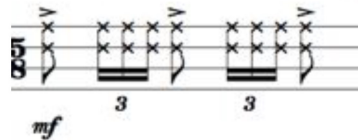
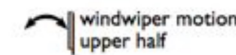


Move the bow in big or small circular motions with very light bow pressure on the indicated strings, follow the instructions on bow position, speed and dynamics.

windwiper motion



Hold the bow in fist grip and tilt your wrist back and forth downwards/away from you and upwards/towards you, so that the bow is brushing the strings vertically in a windwiper style.



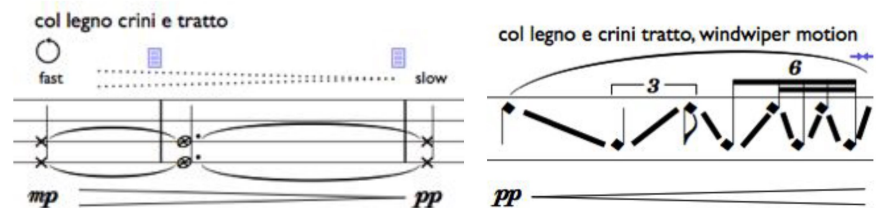
col legno e crini battuto

Tilt the bow downwards away from you, so that both the wood and the edge of the hair touches the strings. To achieve the right timbre the bow is always tilted in this way, with the hair towards the fingerboard and the wood towards the bridge. Bounce in a very controlled way towards the strings on the lower half or the middle of the bow. To achieve a dark and precise percussive sound, bounce right beside the bridge. The example shows a battuto arpeggio from the lowest to the highest string.



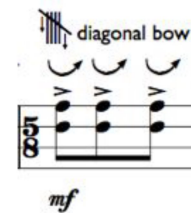
col legno e crini tratto

Tilt the bow downwards away from you, so that both the wood and the edge of the hair touches the strings. To achieve the right timbre the bow is always tilted in this way, with the hair towards the fingerboard and the wood towards the bridge. Perform the indicated motions; circular motion, straight motion/back and forth (across the strings in an ordinary way), or windwiper motion, and follow the indicated speeds.



diagonal bow, bouncing

Bounce on and off strings: position the bow diagonally across the strings, with the tip pointing slightly downwards. Bounce the bow on the strings from above at the ordinary playing position and bounce off, towards the bridge.



Bounce off strings and bridge: position the bow diagonally across the strings around the middle/lower part of the bow, with the tip pointing slightly downwards. Sweep the strings rapidly downwards with the bow, sweep over the bridge and bounce off the strings on the other side of the bridge.



hand

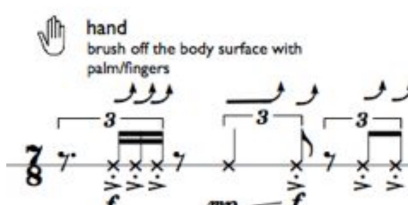
Both hands are occasionally used for bringing out the wooden sound of the resonant body of the cello.

Sweeping the surface with palm and fingers: sweep very lightly, adjust the speed and the pressure and the distance to the microphone to find suitable timbres.

Scraping back and forth with palm and fingers: move your hand very rapidly and lightly on a resonant spot of the body.

Brush off the surface: brush rapidly with palm and fingers on the surface and bounce off the surface diagonally upwards, as if cleaning the surface.

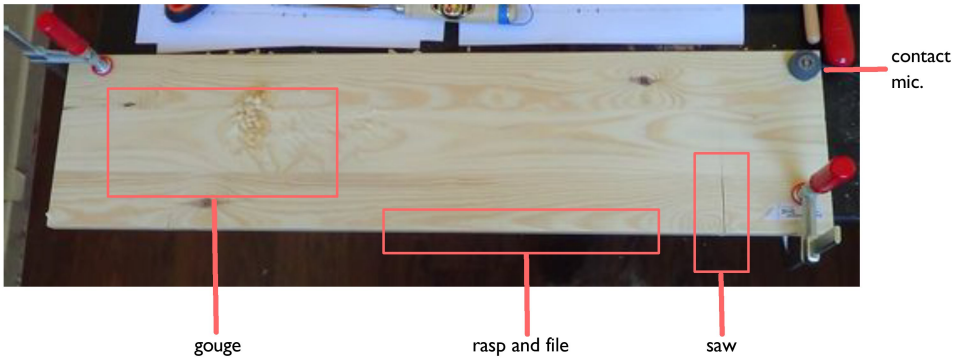
Tapping with underside of middle finger: produce a soft, but clear percussive sound, and adjust the distance to the microphone to produce the dynamics.



Copy for perusal. This music is copyright protected.

Tools

Wooden plank/performance positions



A plank made from a soft wooden material such as spruce or pine. Ca 80 cm long and 20 cm wide, 1,5 cm thick. For example the wall shelf plank "Ekby Tryggve" at IKEA.

Two clamps, see photo above.

Attach the plank on a desk of normal height, along the long side of the desk, with the short side of the plank towards the shorts side of the desk. Fix the plank to the desk with two clamps, and let both the long side and the short side stick out around 2 cm from the desk to create a margin for the saw. The performer stands at the long side of the plank to operate the tools. Place the tools on a soft material right next to the plank to reach all of them quickly during playing.

A contact microphone of very good quality (for example Schertler E-DYN or similar) is attached two the upper right corner, see the photo.

All the "non marked" area on the plank is used for the gestures performed by the marker and the hand.

Saw



symbol in score:



A small, rectangular handsaw, with a blade of ca 30 cm, and a handle attached to the short side of the blade. The saw position on the plank is a few centimeters to the left of the clamp at the long side. Before starting the piece, make a light cutting mark diagonally against the upper edge of the long side of the plank. It should be sufficiently deep and smooth to let you pull and push the saw easily without risking to jump off the cut or to get stuck with the saw in the wood. Make sure that you are sawing at an angle that is quite horizontal, with the saw blade just slightly diagonal so that you can saw for a long time without reaching the bottom of the plank (and the table underneath!). Saw in an ordinary way, and create the dynamics with the speed and the pressure of the blade. Use the whole blade when sawing back and forth in the loudest dynamics.

Gouge



symbol in score:



A medium sized gouge, with a chisel around 18 mm. The gouge position on the plank is the larger area to the left, quite close to the short side of the wood. Hold the gouge handle with your right hand and place the chisel edge on the wooden surface. Place your left hand on the chisel, close to the handle. Push the gouge lightly into the wood with your right hand at the same time as you press down the chisel with your left hand. As soon as the gouge start scraping the wood you release the pressure of the left hand, so that the chisel moves upwards again and doesn't risk to get stuck in the wood. At each new gouge motion, place the chisel slowly and carefully on the wood to avoid an initial percussive attack. Practise this soft, round movement of the gouge before starting the piece.

Rasp



symbol in score:



A medium sized rasp, the steel bar ca 25 cm long, with quite coarse teeth to produce strong friction in a dark timbre when rasping the edge of the plank. The position on the plank is ca 20 cms to the right of the saw, at the long edge of the plank. You should be able to simultaneously use the saw and the rasp with a comfortable distance in between. Rasp in an ordinary way with a diagonal angle to the upper edge, and create the dynamics with the speed and the pressure of the steel bar. Use the whole bar when rasping back and forth in the loudest dynamics.

File



symbol in score:



A very small file, the steel bar ca 12 cm, with small and fine teeth, to produce a light friction sound in a bright timbre. The position on the plank is ca 30 cms to the right of the saw, at the long edge of the plank, right beside the rasp position. File in an ordinary way with a diagonal angle to the upper edge, and create the dynamics with the speed and the pressure of the steel bar. Use the whole bar when filing back and forth in the loudest dynamics. When there is a notated tremolo it is easier to control the gradual change of speed and dynamic when filing lightly along the edge instead of across the edge. You hold the file in the ordinary way but move the steel bar rapidly back and forth along the edge.

Marker



symbol in score:



A small marker, consisting of a wooden handle in the size and shape of an ink pen, with a thin metal wire bent in the shape of a "v" attached to the end of the handle to produce a marking tip (on markers with a wire in each end of the handle, use the one with thicker and softer tip). The position on the plank is on the flat side of the plank, along the long edge towards the inside of the table, as well as the area to the right of the saw. Use the edge of the tip of the "v" to make different motions against the wooden surface of the plank. Sometimes you "write" parts of sentences with the marker, hold it then as an ordinary pen. When moving the tip in circular motion or other irregular shapes, hold the handle very lightly to be able to move the tip smoothly on the wooden surface.

Hand

symbol in score:



The left hand is used for striking and sweeping the wooden surface. The position on the plank is the whole upper, flat side only avoiding the areas of gouge marks and the saw cut. The striking position is just to the left of the saw position, to be sufficiently close to the microphone. Strike the whole palm and all fingers heavy and flat against the surface to produce a thick and loud percussive attack. When sweeping the wood, touch the surface very lightly and softly, and create the sweeping motions very slowly and smoothly as if you are carefully listening to and examining the quality of the wood.

Notation: downbow/upbow

The notation of downbow and upbow are used for saw, rasp and file when scraping the edge of the wood.

▣ Downbow: pull tool towards you

∨ Upbow: push tool away from you

Electronics

tba

Performance material

To order the score and get more information on microphones and tools, please contact the composer: malin_bang@hotmail.com

See also the internet site: www.malinbang.com

15

Vlc. $\frac{5}{4}$ $\frac{3}{4}$ $\frac{7}{8}$ $\frac{3}{8}$ $\frac{7}{8}$ $\frac{6}{4}$

Tls. $\frac{5}{4}$ $\frac{3}{4}$ $\frac{7}{8}$ $\frac{3}{8}$ $\frac{7}{8}$ $\frac{6}{4}$

El. $\frac{5}{4}$ $\frac{3}{4}$ $\frac{7}{8}$ $\frac{3}{8}$ $\frac{7}{8}$ $\frac{6}{4}$

straight motion slow fast
brush diagonally off the surface
circular motion medium fast slow

arm damping place the arm across strings and fingerboard, so that the hand can scrape/tap the body surface on the other side

tap with underside of the middle finger, far away from the microphone

palm and fingers sweep the wooden surface of the body very lightly according to the indicated motions

palm and fingers sweep the wood very lightly in a slow and soft motion, create the dynamics by approaching/distancing the plank microphone

straight motion circular motion draw the shape circular motion bounce diagonally off the surface

pp *mp* *pp* *mp* *pp* *mf* *p*

20

Vlc. $\frac{6}{4}$ $\frac{6}{4}$ $\frac{6}{4}$ $\frac{6}{4}$

Tls. $\frac{6}{4}$ $\frac{6}{4}$ $\frac{6}{4}$ $\frac{6}{4}$

Electr. $\frac{6}{4}$ $\frac{6}{4}$ $\frac{6}{4}$ $\frac{6}{4}$

brush diagonally off the surface fast
straight motion circular motion *sim.*

tap with underside of the middle finger, move towards the microphone

draw this shape, dispose it evenly throughout the duration
very slow med.

1 I start by planing both plates flat on the inside. I arrange the rib structure on the plate and mark it with a tracer. I also draw the outline with a pen.

mp *pp* *mf* *p* *pp* *mf* *p* *mf*

23

Vlc. $\frac{4}{4}$ $\frac{6}{8}$ $\frac{5}{8}$ $\frac{4}{8}$ $\frac{5}{16}$

Tls. $\frac{4}{4}$ $\frac{6}{8}$ $\frac{5}{8}$ $\frac{4}{8}$ $\frac{5}{16}$

Electr. $\frac{4}{4}$ $\frac{6}{8}$ $\frac{5}{8}$ $\frac{4}{8}$ $\frac{5}{16}$

accel. $\text{♩} = 68$
vertical bow, at frog

pick up bow

change from arm damping to ordinary damping

"write" the following words on the wood, close to the microphone, in an efficient handwriting manner
on the inside change hands pick up saw marker very slow very fast

saw pick up file

p *mf* *fff* *p* *ff* *fff* *fff* *mp* *ff*

29 ord. bow pos.

diagonal bow, sul pont bounce on string from above, and bounce off, towards the bridge

windwiper motion, col legno e crini tratto

circular motion

windwiper motion, col legno e crini tratto

vertical bow

upper half

frog

slow fast

Vlc. *fff* *mp* *pp* *mf* *fff* *mf*

Tls. *fff* *mp* *mf*

Electr. *Technically speaking*

37

vertical bow, at frog

diagonal bow bounce on and off string like before

vertical bow, at frog

diagonal bow windw. motion, col legn e crini tratto

circular motion

slow fast

diagonally against the edge

slow fast

back and forth across the edge

3 there is no difference between the belly and the back

4 when you hollow out the inside.

Vlc. *fff* *mf* *fff* *mf*

Tls. *fff* *mf*

Electr. *3* *4*

44

u.h. frog

vertical bow

windwiper motion, col legno e crini tratto

ord. bow, right beside the bridge

vertical bow

slow very fast

diagonally against the edge med. very fast

back and forth across the edge

diagonally against the edge med. very fast

5 They are made the same way

6 and I use the same system

7 for both plates.

Vlc. *p* *fff* *fff* *f* *p* *fff*

Tls. *fff* *fff* *f* *f*

Electr. *5* *6* *7*

51

vertical bow

col legno e crini tratto

ord. bow, right beside the bridge

vertical bow

col legno e crini tratto

ord. bow, right beside the bridge

vertical bow

Vlc.

Tls.

Electr.

59

ord. bow, right beside the bridge

vertical bow

ord. bow pos.

ord. bow, right beside the bridge

col legno e crini battuto

Vlc.

Tls.

Electr.

F

68

ord. bow, right beside the bridge

col legno e crini batt.

ord. bow, right beside the bridge

Vlc.

Tls.

Electr.

G

72

Vlc. *col legno e crini batt.* *slow* *very fast* *slow arpeggios*

Tls. *change to marker* *diagonal motion* *fast* *marker* *make percussive dots on the wood* *slow* *very fast* *draw short, straight lines* *write the following words:* *I arrange*

Electr.

78

Vlc. *ord. bow, right beside the bridge* *med.* *fast* *ord. bow, right beside the bridge* *med.* *very fast*

Tls. *write the following words:* *the rib structure* *make percussive dots on the wood* *very fast* *draw short, straight lines* *rasp* *med.* *very fast*

Electr.

83

Vlc. *col legno e crini batt.* *as fast as possible* *ord. bow, right beside the bridge* *med.* *very fast* *col legno e crini batt.* *as fast as possible* *ord. bow, right beside the bridge* *med.* *very fast* *col legno e crini batt.* *as fast as possible*

Tls. *write the following words:* *and mark it* *f* *make percussive dots on the wood* *very fast* *write the following words:* *with a tracer.* *make percussive dots on the wood* *very fast*

Electr.

6

89

vertical bowing extremely small, fast movement → large slow movement

rit.

col legno e crini tratto, upper half

very fast slow

Vlc. *f* *ff* *mp* *fff* *pp*

Tls. draw short, straight lines put away marker palm slap brush the surface with palm/fingers

Electr.

J

♩ = 60

93

col legno e crini batt.

very fast

col legno e crini tratto, upper half

very fast slow

Vlc. *mf*

Tls. palm and fingers sweep the wooden surface slowly straight line

change rasp to right hand

8

Electr. *pp* *pp* *mf*

Il punto principale per la bontà dello strumento, si è ritrovare del bell' abete vecchio, e sonoro per la tavola

97

slow

sul G, C col legno e crini tratto, windwiper motion

col legno e crini batt.

Vlc. *pp* *pp* *mf*

Tls. rasp

straight line

9

Electr. *mp*

il migliore è quello, che vien dal Tirolo.