

NEW FINNISH MUSIC

Olli Mustonen

Quatrilles

6 Bagatelles

Bagatelles

Bagatelles

Bagatelles

Bagatelles

Bagatelles

for solo violin

FAZER

F. M. 06796

Quatrilles

Moderato con anima ♩ - ca.108

Olli Mustonen (1979)

p

mp

mf

f

molto rit. *a tempo*

pizz. *arco* *pizz.*

arco

p

pp *cresc.*

p

f

mo - *ren* - *do*

a tempo

p *mp*

mf

f *dim.*

p *mf*

The musical score consists of ten staves of music. The first staff begins with a piano (*p*) dynamic and features a complex melodic line with many slurs and ties. The second staff continues this line, ending with a forte (*f*) dynamic and an 8-measure rest. The third staff contains the lyrics "mo", "ren", and "do" under specific notes. The fourth staff is marked "a tempo" and shows changes in time signature (5/4, 2/4, 7/4, 2/4) and dynamics (*p*, *mp*). The fifth staff continues with a mezzo-forte (*mf*) dynamic and more time signature changes (4/4, 2/4, 6/4, 4/4). The sixth staff features a forte (*f*) dynamic and a decrescendo (*dim.*) marking, with an 8-measure rest. The seventh staff continues the melodic development. The eighth staff begins with a piano (*p*) dynamic. The ninth staff is marked mezzo-forte (*mf*) and features a complex texture with many chords. The tenth staff continues this complex texture.

allargando a tempo

f

simile

ff

f

p *mf* *mp* *molto rit.*

risoluto ♩ = ca.200

f *pizz. arco*

The musical score is written on a grand staff with a single melodic line. It begins with a treble clef and a key signature of one flat (B-flat). The tempo markings are *allargando* and *a tempo*. The first measure is in 5/4 time, followed by a section in 3/4 time marked *f*. The second line starts with a *simile* marking. The third line features a *ff* marking. The fourth line continues the melodic development. The fifth line has a *f* marking. The sixth line includes a *p* marking and a tempo change to *molto rit.*. The seventh line has a *mf* marking. The eighth line has a *mp* marking. The ninth line has a *risoluto* marking and a tempo indication of ♩ = ca.200. The tenth line has a *f* marking and a *pizz. arco* marking. The eleventh line continues the melodic line. The twelfth line has a *f* marking. The thirteenth line has a *pizz. arco* marking. The fourteenth line has a *f* marking. The fifteenth line has a *pizz. arco* marking. The sixteenth line has a *f* marking. The seventeenth line has a *pizz. arco* marking. The eighteenth line has a *f* marking. The nineteenth line has a *pizz. arco* marking. The twentieth line has a *f* marking. The twenty-first line has a *pizz. arco* marking. The twenty-second line has a *f* marking. The twenty-third line has a *pizz. arco* marking. The twenty-fourth line has a *f* marking. The twenty-fifth line has a *pizz. arco* marking. The twenty-sixth line has a *f* marking. The twenty-seventh line has a *pizz. arco* marking. The twenty-eighth line has a *f* marking. The twenty-ninth line has a *pizz. arco* marking. The thirtieth line has a *f* marking. The thirty-first line has a *pizz. arco* marking. The thirty-second line has a *f* marking. The thirty-third line has a *pizz. arco* marking. The thirty-fourth line has a *f* marking. The thirty-fifth line has a *pizz. arco* marking. The thirty-sixth line has a *f* marking. The thirty-seventh line has a *pizz. arco* marking. The thirty-eighth line has a *f* marking. The thirty-ninth line has a *pizz. arco* marking. The fortieth line has a *f* marking. The forty-first line has a *pizz. arco* marking. The forty-second line has a *f* marking. The forty-third line has a *pizz. arco* marking. The forty-fourth line has a *f* marking. The forty-fifth line has a *pizz. arco* marking. The forty-sixth line has a *f* marking. The forty-seventh line has a *pizz. arco* marking. The forty-eighth line has a *f* marking. The forty-ninth line has a *pizz. arco* marking. The fiftieth line has a *f* marking. The fifty-first line has a *pizz. arco* marking. The fifty-second line has a *f* marking. The fifty-third line has a *pizz. arco* marking. The fifty-fourth line has a *f* marking. The fifty-fifth line has a *pizz. arco* marking. The fifty-sixth line has a *f* marking. The fifty-seventh line has a *pizz. arco* marking. The fifty-eighth line has a *f* marking. The fifty-ninth line has a *pizz. arco* marking. The sixtieth line has a *f* marking. The sixty-first line has a *pizz. arco* marking. The sixty-second line has a *f* marking. The sixty-third line has a *pizz. arco* marking. The sixty-fourth line has a *f* marking. The sixty-fifth line has a *pizz. arco* marking. The sixty-sixth line has a *f* marking. The sixty-seventh line has a *pizz. arco* marking. The sixty-eighth line has a *f* marking. The sixty-ninth line has a *pizz. arco* marking. The seventieth line has a *f* marking. The seventy-first line has a *pizz. arco* marking. The seventy-second line has a *f* marking. The seventy-third line has a *pizz. arco* marking. The seventy-fourth line has a *f* marking. The seventy-fifth line has a *pizz. arco* marking. The seventy-sixth line has a *f* marking. The seventy-seventh line has a *pizz. arco* marking. The seventy-eighth line has a *f* marking. The seventy-ninth line has a *pizz. arco* marking. The eightieth line has a *f* marking. The eighty-first line has a *pizz. arco* marking. The eighty-second line has a *f* marking. The eighty-third line has a *pizz. arco* marking. The eighty-fourth line has a *f* marking. The eighty-fifth line has a *pizz. arco* marking. The eighty-sixth line has a *f* marking. The eighty-seventh line has a *pizz. arco* marking. The eighty-eighth line has a *f* marking. The eighty-ninth line has a *pizz. arco* marking. The ninetieth line has a *f* marking. The ninety-first line has a *pizz. arco* marking. The ninety-second line has a *f* marking. The ninety-third line has a *pizz. arco* marking. The ninety-fourth line has a *f* marking. The ninety-fifth line has a *pizz. arco* marking. The ninety-sixth line has a *f* marking. The ninety-seventh line has a *pizz. arco* marking. The ninety-eighth line has a *f* marking. The ninety-ninth line has a *pizz. arco* marking. The hundredth line has a *f* marking.

[illegible]

6 Bagatelles

♩ = ca.116

Olli Mustonen (1978)

1

f

ff

sub. p

cresc.

♩ = ca.76

Olli Mustonen (1978)

2

mf

p

mf

cresc.

pizz.

arco

Three staves of musical notation. The first staff includes dynamics *dim.* and *f*. The second staff includes *dim.*, *p*, and *f*. The third staff includes *sub. p*, *mf*, *ff*, and *sub. p*.

$\text{♩} = \text{ca.120}$

Olli Mustonen (1978)

Ten staves of musical notation. The first staff is marked with a '3' and '4/4' time signature, with dynamics *mp* and *mf*. The second staff includes *f* and *p*. The third staff includes *f*. The fourth staff includes *f*, *pizz.*, *fine*, *ff*, and *f*. The fifth staff includes *ff* and *f*. The sixth staff includes *cresc.*, *ff*, and *mf*. The seventh staff includes *f* and *p*. The eighth staff includes *cresc.*, *ff*, and *da capo al fine*.

♩ - ca.144

Olli Mustonen (1978)

4

f

mf

f

pizz.

Andante cantabile

Olli Mustonen (1980)

5

pp

presto con fuoco

First system of musical notation, featuring four staves. The first staff has a treble clef and a key signature of one sharp (F#). The second staff has a treble clef and a key signature of one sharp. The third staff has a treble clef and a key signature of one sharp, with the tempo marking *andante cantabile* and the dynamic *pp*. The fourth staff has a treble clef and a key signature of one sharp, with the dynamic *pizz.* and the tempo marking *molto rit.*

Furioso

Olli Mustonen (1980)

Second system of musical notation, featuring seven staves. The first staff has a treble clef and a key signature of one sharp, with the tempo marking *Furioso* and the dynamic *f*. The second staff has a treble clef and a key signature of one sharp. The third staff has a treble clef and a key signature of one sharp. The fourth staff has a treble clef and a key signature of one sharp, with the dynamic *p cresc.*. The fifth staff has a treble clef and a key signature of one sharp, with the dynamic *f*. The sixth staff has a treble clef and a key signature of one sharp, with the tempo marking *molto rit.* and the dynamic *p*. The seventh staff has a treble clef and a key signature of one sharp, with the tempo marking *a tempo* and the dynamic *ff*, and the tempo marking *pizz.*

Lopullinen nuottikuva on synnitetty Wang 2200-pientietokoneeseen liitetyn Servo-gor 281-piirturin avulla.

Tietokoneen ja piirturin toiminnan ohjausta varten tarvitaan tietokoneohjelma, jonka Helsingin yliopiston tilastotieteen professori Seppo Mustonen on laatinut vuonna 1980. Nuotinpiirto-ohjelma on tehty kokeilumielessä, mutta se liittyy eräin osin prof. Mustosen kehittämään laajaan tilastolliseen SURVO 76-ohjelmistoon ja on vaikuttanut erityisesti ns. editoriaalisien käyttötavan syntyyn tämän ohjelmiston yhteydessä.

Editoriaalisessa käytössä kaikki tieto (tässä nuottikäsikirjoitus) esitetään normaalein kirjoitusmerkein laajassa toimituskentässä, josta aina osa näkyy tietokonepäättteen kuvaputkella. Käyttäjä voi koska tahansa kirjoittaa lisää tekstiä sekä muokata ja korjailia sitä tarpeen mukaan hyvin helposti. Tekstin ja muun käsiteltävään tiedon sekaan on lisäksi mahdollista kirjoittaa erilaisia ohjeita, joita kone on opetettu "ymmärtämään" ja joiden avulla se saadaan välittömästi toteuttamaan ihmisen kannalta hankalia toimenpiteitä, kuten erilaiset laskenta- ja lajittelutehtävät sekä kuvien piirtämiset.

Esim. Quatrillen alku näyttää toimituskentässä seuraavanlaiselta:

```
1 *SAVE QUAD
2 * Olli Mustonen: Quatrille (1)
3 *
4 *#(4/1/0)%(800/400)Quatrille*
5 *#(2/1/0)%(0/200)Moderato con anima*
6 *#(2/1/0)%(1670/200)Olli Mustonen (1979)*
7 *G, T(3/4), U90, Q. 4, L. 75, F/4.,
8 *YCO, X*#(1.8/1.2/15)p*, -Hb1/8, Q. 9, XC1, <Eb2, H1>, XC1.*
9 *+F/4., Q0. 8, YA3, X(1/4),
10 *-<Hb1/16, XC1, YA3, X*#(1.5/1/0) = ca. 108°, Eb2>, <Ab, Db3, A2, E>, XC1.* Q. 4,
11 *U80, -<Hb1/8, XC1, C2>, XC1., +<H1, XC1, A>, XC1., <Hb, Ab>*
12 *G/4., YG0, X+1, -C#2/8, XC2, <Ct, F#>, X+1., XC2., R*
13 *-<A2/8, XC2, YG0, X-1, G#2>, XC2.,
14 *<F, Eb/16, XC2, Db>, XC2., +<H1, XC2, A, XC2., G, F>, X-1.*
15 *U80, <E/8, XC1, F#>, XC1., <Ft, XC1, Eb>, XC1., <Et, D>*
16 *<C#1/8, Z., G>, Z., <F#, Z., Ct>, Z., <H0, Z., Ft1>, Z.*
17 *U100, K. 2, <E1/8, A0, C#2>, YC0, X*#(1.8/1.2/15)mp*,
18 *K9, -<Eb2/16, D, F#1/8>, <Ft/16, XC1, Eb, XC1., Ab1, Hb>, R*
19 *U80, +<F#1/8, F/16, XC1, G#>, XC1.,
20 *<Ft/8, F/16, XC1, Gt>, XC1., <E/8, D#1/16, YC, XC1, C#>, YH0, XC1.*
21 *U90, +<Ct1/8, G, E2>, YC0, X*mf*,
22 *K9, L. 75, -<F#2/16, Ft, A/8>, <G#1/16, XC1, H, XC1., Gt, F>*
23 *-<E2, YF, XC1, G#, YA, XC1., Eb, D>, <C#, D#, C, H1>, U80, +<Ct2, H1, F#, G#>, R*
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Nuottikäsikirjoitus on siinä kuvattu kaikkine teksteineen ja täydennysmerkintöineen tähän tarkoitukseen erikseen suunnitellulla koodilla, jossa nuottinimet C, D, E jne. esiintyvät normaaleina kirjaimina ja aika-arvot osoitetaan tarvittaessa kauttaviiavan avulla. Esim. F1/4. on 1-viihainen F pisteellisenä neljäsosanuottina. Vertaamalla tätä "käsikirjoitusta" lopulliseen nuottikuvaan on helppo havaita, miten eri yksityiskohtat ilmaistaan.

Toimituskenttään kirjoitettu sävellys voidaan tallettaa tietokoneen levymuistiin ja ottaa sieltä uudelleen käyttöön esim. korjailuja varten. Varsinainen nuotinpiirrosohjelma tekee työnsä tämän tallennoksen avulla. Aluksi se tutkii koko materiaalin ja tekee tarvittaessa itsenäisesti päätelmiä siitä, miten tahdit on paras jakaa eri riveille. Tämän jälkeen käsitellessään yhtä piirrettävää riviä kerrallaan se käy uudelleen läpi käsikirjoituksen tämän rivin osalta ja jakaa kunkin tahdin tarvitseman tilan mahdollisimman tasaisesti. Vasta tämän jälkeen piirretään rivin tarvitsema viivasto ja sille kaikki nuotti- ja muut merkinnät normaalissa järjestyksessä.

Koneelle on opetettu eräitä nuotinpiirtämisen sääntöjä, jotka liittyvät merkkien keskinäisiin etäisyyksiin, kaarten muotoon, palkkien kallistukseen, nuotinvarsin pituuksiin jne. Kaikkiin yksityiskohtiin käyttäjä voi kuitenkin puuttua liittämällä käsikirjoitukseen erilaisia ohjausmerkintöjä.

Piirturi tekee lopullisen työn piirrosohjelman ohjaamana täysin automaattisesti tyhjälle paperiarkille. Piirturissa käytetään tussikynää ja kaikki merkinnät syntyvät useiden lyhyiden viivanvetojen ja kynänsiirtojen tuloksena. Esim. G-avain koostuu noin 200 erillisestä viivanpätkästä, jotka riittävän pienessä skaalassa antavat saman tuloksen kuin normaali painatustekniikka. (Takakannessa nähdään tällä ohjelmalla piirrettyjä merkkejä eri kokoisina. "Suurennoista" ilmenee merkin sisäinen rakenne, joka siis on jouduttu opettamaan koneelle kunkin merkin osalta erikseen, mutta vain kerran.)

Tavallisesti piirtäminen tapahtuu A3-arkille, josta pienennetään normaalein kopiomenetelmin haluttuun kokoon. Yhden sivun tekemiseen piirturi tarvitsee noin puoli tuntia.

Toistaiseksi po. nuotinpiirrosohjelmaa voidaan käyttää vain yhdelle viivastolle kirjoitettujen nuottien tuottamiseen. Ohjelman laajentaminen esim. orkesteripartituurien painatukseen on täysin mahdollista.

The sheets of music in this publication have been printed by using the Wang 2200 computer with the Servogor plotter 281.

To control the plotting a special program has been created in 1980 by Seppo Mustonen, professor of Statistics at the University of Helsinki. This music plotting program is an experimental one and it is related to an interactive statistical system SURVO 76 of professor Mustonen. In the SURVO 76 system a new editorial approach in text and data processing has been developed partially on the basis of this musical application.

When the system is used in the editorial mode, all the information (here the musical manuscript) is represented as normal text in a large edit field which always is partially visible on the TV screen of the computer terminal. The user can type text in the edit field and modify it very easily. It is also possible to write various instructions among the text. The computer has been taught to 'understand' those instructions and they make possible to carry out immediately various more complicated tasks like computing with numbers and formulas given by the user, sorting of data and plotting of pictures.

For example, the first 11 bars of Quatrilles have been coded as follows:

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1  *SAVE QUAD
2  *                               Olli Mustonen: Quatrilles (1)
3  *
4  *"#(4/1/0)%(800/400)Quatrilles"
5  *"#(2/1/0)%(0/200)Moderato con anima"
6  *"#(2/1/0)%(1670/200)Olli Mustonen (1979)"
7  *$G,T(3/4),U90,Q.4,L.75,F/4.,
8  *YC0,X*#(1.8/1.2/15)p*, -Hb1/8,Q.9,XC1,<Eb2,H1>,XC1.*
9  *+F/4.,Q0.8,YA3,X(1/4),
10 *-<Hb1/16,XC1,YA3,X*#(1.5/1/0) = ca.108",Eb2>,<Ab,Db3,A2,E>,XC1.*Q.4,
11 *U80,-<Hb1/8,XC1,C2>,XC1.,+<Ht1,XC1,A>,XC1.,<Hb,Ab>*
12 *G/4.,YG0,X+1,-C#2/8,XC2,<Ct,F#>,X+1.,XC2.,R*
13 *-<A2/8,XC2,YG0,X-1,G#2>,XC2.,
14 *<F,Eb/16,XC2,Db>,XC2.,+<H1,XC2,A,XC2.,G,F>,X-1.*
15 *U80,<E/8,XC1,F#>,XC1.,<Ft,XC1,Eb>,XC1.,<Et,D>*
16 *<C#2/8,Z.,G>,Z.,<F#,Z.,Ct>,Z.,<H0,Z.,Ft1>,Z.*
17 *U100,K.2,<E1/8,A0,C#2>,YC0,X*#(1.8/1.2/15)mp*,
18 *K9,-<Eb2/16,D,F#2/8>,<Ft/16,XC1,Eb,XC1.,Ab1,Hb>,R*
19 *U80,+<F#2/8,F/16,XC1,G#>,XC1.,
20 *<Ft/8,F/16,XC1,Gt>,XC1.,<E/8,D#2/16,YC,XC1,C#>,YH0,XC1.*
21 *U90,+<Ct1/8,G,E2>,YC0,X*mf*,
22 *K9,L.75,-<F#2/16,Ft,A/8>,<G#2/16,XC1,H,XC1.,Gt,F>*
23 *-<E2,YF,XC1,G#,YA,XC1.,Eb,D>,<C#,D#,C,H1>,U80,+<Ct2,H1,F#,G#>,R*

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The original manuscript with all additional text and notations is described in a special code (developed by Seppo and Olli Mustonen) where the notes C,D,E, etc. are represented by the corresponding letters and the duration of the note is given after a slash, if necessary. For example, F1/4. is a dotted quarter note F in the first octave. By comparing this coded manuscript with the final music sheet it is easy to see the idea of coding.

The composition coded in the edit field in this way can be stored in the disk memory of the computer and it can be reloaded afterwards to the edit field for correcting, for example. The music plotting program works on the basis of this stored manuscript. At first it investigates the whole material and determines, when necessary, how to divide the bars to various lines. Thereafter each line will be treated separately and positioning of each symbol on that line will be determined so that the notations are divided as evenly as possible in the space available. Finally the stave and the music with all additional notations will be written by the plotter.

To obtain a decent result the computer has been taught various rules of music printing: Spacing between various notations, form of the slurs, slant of the beams, length of the stems etc. The user may, however, control each detail according to his or her own taste by inserting various extra instructions to the manuscript.

The plotter makes the final music sheets automatically under the control of the plotting program. In the plotter liquid ink pens of high quality are used and all the notations are generated as sequences of short pen strokes. For example, the G clef consists of about 200 distinct strokes which in small scale give a smooth result. (On the back cover symbols of various sizes are printed. The structure of each symbol, which is clearly seen in larger scale, has been taught to the computer, but only once for each type.)

Usually the original scale in plotting is DIN A3 and reduction to the final size is made by means of photo copying. The plotter needs about 30 minutes to produce one page.

For the time being this experimental program can be used only for music written on one stave. It is, however, possible to extend it to print orchestral scores, etc.

Olli Mustonen (b. Helsinki 1967) is a young Finnish pianist and composer. At the age of five he began studies in harpsichord, piano and composition. His first teacher in piano was *Ralf Gothóni*. Since 1978 he has been a student of Sibelius Academy in Helsinki and his teachers are *Eero Heinonen* (piano) and *Einojuhani Rautavaara* (composition).

Olli Mustonen has given recitals in Finland and appeared as a soloist of several orchestras. He has also had many radio and TV performances in Finland. His main compositions so far are '*Divertimento for piano and orchestra*' (1979) and '*Concerto for piano and orchestra*' (1981). Minor works include pieces for piano and solo violin.

