

# String Trio Music

*for viola, cello, and contrabass*

by Cort Lippe

1989

*In Memoriam*  
John Cassevettes  
(1929 - 1989)

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## Program Notes

**String Trio Music** (for viola, cello, and double-bass) (1989) was premiered at the International Computer Music Conference 1990 in Glasgow. This work draws on two extremely different aspects of my musical experience: improvisational music and music involving computers. These two musical domains, representing intuition and rationale—opposites yet complements —hold a great deal of interest for me.

About half of the composing process involved a computer, using programs written by me and employing stochastic procedures. One problem which interests me is the modeling of improvisational "behavior" based on stochastic processes. The main compositional algorithm used is based on elaborations of *Brownian motion*. Other algorithms used include: sorting and searching procedures, tendency masks, interpolation routines, and data reduction schemes. Virtually all musical parameters were effected via computation.

The other half of the composing process was intuitive: thus the work can be considered both as a confrontation, and as an attempt at a synthesis of two compositional methods. Although there is no improvisation in the piece, the interaction among the musicians includes reactive and reflexive gestures associated with improvisational music - in which players are required to listen closely to one another and react rapidly within the musical discourse. This piece explores the interactions among three soloists, in which no part plays a secondary role. Duration: 15 minutes.

## STRING TRIO MUSIC (1989)

by C. Lippe

-In Memoriam-  
John Cassavetes  
(1929-1989)

(1254)

viola

cello

contrabass

9

(13)

14

A

PIZZ

ARCO

overbow

rit. tremolo bowing → flautando

nat. harmonic gliss.

constantly change harmonic content via bow

19

(no clear pitch)

overbow

acc.

col legno

battuto

gliss.

(above fingerboard)

decrease bat. speed

poco a poco meno stac. →

clamp strings

FF (clamp strings)  
(and 1/2 ins above)  
(Fingerboard)

(all four)  
(strings)

wide vib. very slowly

mf

non batt. ARCO (molto stac.)

micrtonal gliss. very slowly →

poco a poco molto vib. → poco a poco vib. normale f →

gliss.

24

f decres. poco a poco  
continues gliss.  
f decres. poco a poco  
f decres. poco a poco

gliss. gliss. gliss. gliss. gliss. gliss. gliss.

mp

28

microtonal gliss. → (F#) very slowly (continue gliss.)

p cresc. poco a poco → mf

rit. tremolo bowing poco a poco

cres. poco a poco → mf

cres. poco a poco → continue gliss.

cres. poco a poco → mf

32

PIZZ

ARCO

gliss

mf ss mp f gliss

mf acc. poco a poco → sul tasto

f molto legato poco a poco sul pont. gliss to each note → decres. poco a poco

f acc. poco a poco to fast as possible gliss fast as possible

arco flautando molto sul pont. decres. poco a poco →

poco a poco flautando

35

molto sul pont. (gliss with natural harm. →)

decres. poco a poco harmonic gliss →

natural harm. gliss (fast as possible)

gliss fast as possible

molto sul pont. (gliss with natural harm. →)

decres. poco a poco harmonic gliss →

gliss fast as possible

(J=60)

38 rit. gliss. speed poco a poco →

decreas. poco a poco →

rit gliss speed poco a poco →

decreas. poco a poco →

decreas. poco a poco →

very slow harm. gliss (up/down/up microtonally) high as possible

over bow sul pont. →

high as possible

high as possible

(bow on side of bridge)

44 sul tasto (flautando)

senza vib. f

→ sul tasto flautando normale

molto vib → normale

gliss. molto sul pont.

molto vib. (overbow →)

normale

(bow tailpiece) f upper part

molto vibrato

espressivo

f ff

tr (±)

molto vibrato

ff

Normale f sul tasto

ARCO (normale)

48 natural harmonic gliss (rapido)

PIZZ

Col legno Battuto

f ff

molto vib.

PIZZ (ricochet) very wide vib.

tr (±)

ARCO

gliss

sal pont.

sul tasto mf

mf

tr (±)

natural harmonic glissandi

52 sul tasto ARCO (rit. trill)

Col legno

f mf

tr (±)

PIZZ

ARCO sul tasto → sul pont. → sul tasto

poco a poco molto sul pont. →

tr (±)

poco a poco flautando

(stop tremolo)

gliss slowly (±)

sul tasto gliss sul pont. (alternate strings rapidly)

(bow simultaneously)

mf (molto sul pont.)

gliss very slowly

gliss very slowly

very fast vib. (bow normal)

poco a poco rit. vib →

56

col legno battuto 5 6 rapid gliss normale battuto  
 ff (dampen strings) f stop trem (non sl. pont.)  
 3mf (stop vib.) poco a poco normale → p  
 (contin. gliss) gliss slowly (bow side) sul pont  
 (gliss on II) sul tasto normale  
 f

poco a poco molto vib.

61

cres. poco a poco → flautando e molto sul pont  
 non flaut. continue gliss → cres. poco a poco → (stop gliss) acc. trill poco a poco →  
 mf pp f mf f

64

Molt. vib. sul pont. → (tr) (pitch choice) (ad-lib) (Gimile) (Simile)  
 ff (tr) (the ± ± ±) legato, espressivo  
 acc. trill (moto sul pont.) normale  
 overbow → sul tasto very rapid wide vib.-rit. poco a poco →  
 mf f mf f

69

RIT. POCO (d=60) ff v (gliss)  
 RIT. POCO ff col legno battuto (gliss)  
 (rib. simile) sul pont. (gliss) ARCO  
 RIT. POCO bow side of bridge (gliss) sultato  
 ff sff (gliss) (ARCO) f  
 (overbow) f

( $\approx 60$ ) accelerando  $\rightarrow$  poco a poco  $\rightarrow$  ( $\approx 76$ )

75

RIT.  $\rightarrow$  ( $\approx 60$ ) subito  $\approx 76$

79

MOLTO RIT. poco a poco  $\rightarrow$  ( $\approx 56$ ) ACC. un poco  $\rightarrow$

84

ACC. poco a poco  $\rightarrow$  SUBITO  $\approx 72$  ACC. poco a poco  $\rightarrow$

89

Continue ACC. poco a poco →

SUBITO → (♩≈ 84-88) RIT. molto →

93

3 f cres. poco a poco → → fff decres. poco a poco →

4 f cres. poco a poco → → fff decres. poco a poco →

4 ff molto vib. decres. poco a poco →

f sfz (ff) f ff (side of bridge) (tail) (Pizz.) ff → ff decres. (overbow) ff decres. poco a poco →

continue molto RIT. → (♩≈ 60) RIT. poco a poco →

97

continue decres. poco a poco → → pp

Continue decres. poco a poco → (ARCO) + + + + (ARCO) (L.h. PIZZ) (L.h. PIZZ) (ARCO) (ARCO) [simile-l.h. PIZZ] decres. poco a poco → → mf decres. poco a poco →

Continue RIT. poco a poco → (♩≈ 48)

ACC. poco a poco → [continue flaut. through 128] → (♩≈ 60)

poco a poco molto sul pont.  
poco a poco flautando  
[Continue flaut. through 128]  
poco a poco a poco →  
ARCO  
PIZZ  
ARCO PIZZ  
decres. poco a poco →

mf → p cres. poco a poco →  
(l.h. PIZZ)  
(rit. pizz molto)  
ARCO  
PIZZ  
ARCO  
battuto between Strings with frog of bow back and forth very rapidly while moving from bowing area down, slowly.  
p (lasciare) (vibrante)  
f → decres. poco a poco →

107 ACC. → (♩≈ 66) RIT. → (♩≈ 63) ACC. → (♩≈ 72)

Continue cres. poco a poco → ff  
mf  
gliss.  
gliss. (simile)  
f  
N.B.

Continue decres. poco a poco → ARCO PIZZ ARCO to th. PIZZ ARCO PIZZ ARCO th. f flaut.  
N.B.  
harmonic gliss.

\*N.B. The glissandi should be played almost as portamenti. Discontinuity due to string changes should be disguised.

111 R.I.T. → (♩ ≈ 69) ACC. → (♩ ≈ 78) R.I.T. → (♩ ≈ 74) ACC. → (♩ ≈ 88) R.I.T. →

(always flaut!) molto vib. vib. normale poco a poco molto vib. poco sul pont. vib. normale  
 (F) mf f mf f ff mp  
 (F) (always flaut!) molto sul pont. 5:4 molto vib. poco sul pont. vib. normale sul tasto  
 (F) mf f mf f ff mp  
 (F) PIZZ (bend 4/4 tone)  
 (F) giss. 3 ff double pizz. f (sul pont.)  
 (F) mp  
 (♩ ≈ 79) ACC. → (♩ ≈ 90) R.I.T. → (♩ ≈ 84) ACC. → (♩ ≈ 96) R.I.T. →  
 (F) molto sul pont. molto vib. vib. normale  
 (mp) f mf f  
 (F) normalo poco pont. molto vib. vib. normale molto sul pont.  
 (F) (mp) 3 f mp  
 (F) (pull off) ARCO PIZZ (bend) ARCO  
 (F) (mf) ((v.) molto vib. f sul pont. f (I, III) (pull off) f flautando  
 (F) (mf) f f  
 (♩ ≈ 89) ACC. → (♩ ≈ 102) R.I.T. → (♩ ≈ 94) ACC. → (♩ ≈ 108) R.I.T. → (♩ ≈ 100) ACC. →  
 115 PIZZ ARCO PIZZ ARCO  
 f ff mf f mp  
 poco sul tasto poco a poco sul ponticello → PIZZ ARCO  
 (dampen) giss. PIZZ ARCO  
 (decreased) ff cres. poco a poco → mf  
 (♩ ≈ 112) R.I.T. → (♩ ≈ 108) ACC. → (♩ ≈ 118) R.I.T. → (♩ ≈ 112) ACC. → (♩ ≈ 120)  
 119 PIZZ ARCO PIZZ ARCO  
 f 5 3 f mp f 3 f ff  
 PIZZ ARCO PIZZ (acc.) (rit.) ARCO  
 f mf f mf f ff  
 cres. poco a poco →

\*N.B. At measure 115 v.l. f  
 vlc. glissandi should be  
 almost completely continuous  
 except for a slight pause  
 on the indicated pitches  
 dependent on their durations



## -9- Continue ACC. POCO A POCO -

= ACC POCO A POCO  
(normale)

RIT. POCO A POCO → ricochet →

**RIT. POCO A POCO → poco a poco ricochet →**

(143) (H) b (b) d+ ricochet (batti.) CONTINUE RIT. poco A poco →

(f) repeat rapidly

poco a poco acc. decres. poco a poco → arpeggio figure → (continue very slow gliss →)

# ad-lib asynchronous micro-tonal changes of pitch

(f) (sforz.) III (f) (f)

decrec. poco a poco → (continue slow gliss)

decrec. poco a poco →

6 6 7 6 6 5

= RIT. POCO A POCO

(f) = RIT. POCO A POCO

Less and less string pressure poco a poco → (just slightly dampening strings)  
 continue microtonal changes of pitch but more upwards only, faster and faster → (fast as possible arpeggio)

145

(mf) poco a poco acc. arpeggiato  
 decresc. poco a poco → figure → mp arpeggio figure fast as possible rit. arpeggio

(mf) decresc. poco a poco → p

(continue slow gliss.)

(4) p. (4) p. (4) p. (4) p.

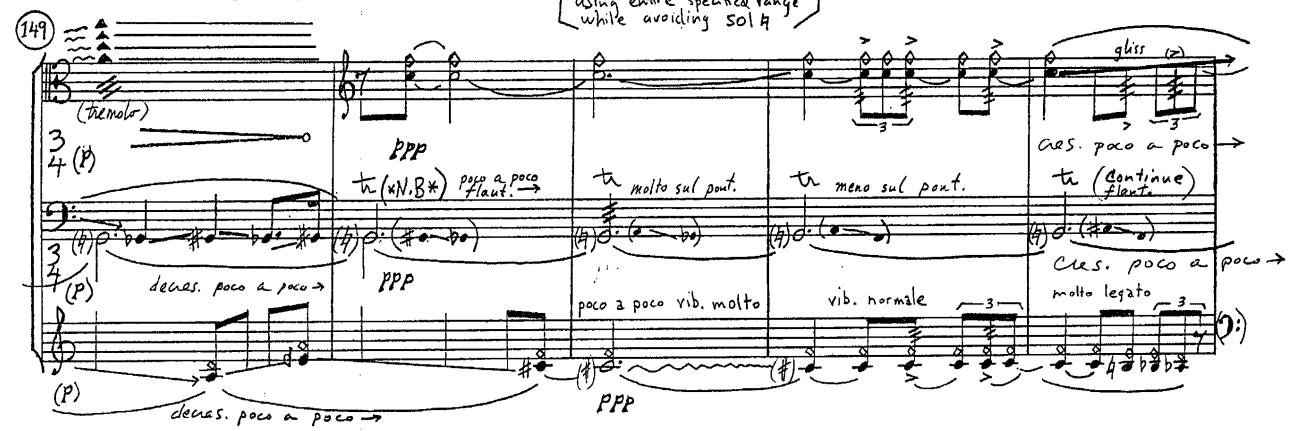
(mf) decresc. poco a poco → mp decresc. poco a poco → p

3 3 3

(mf) mp p

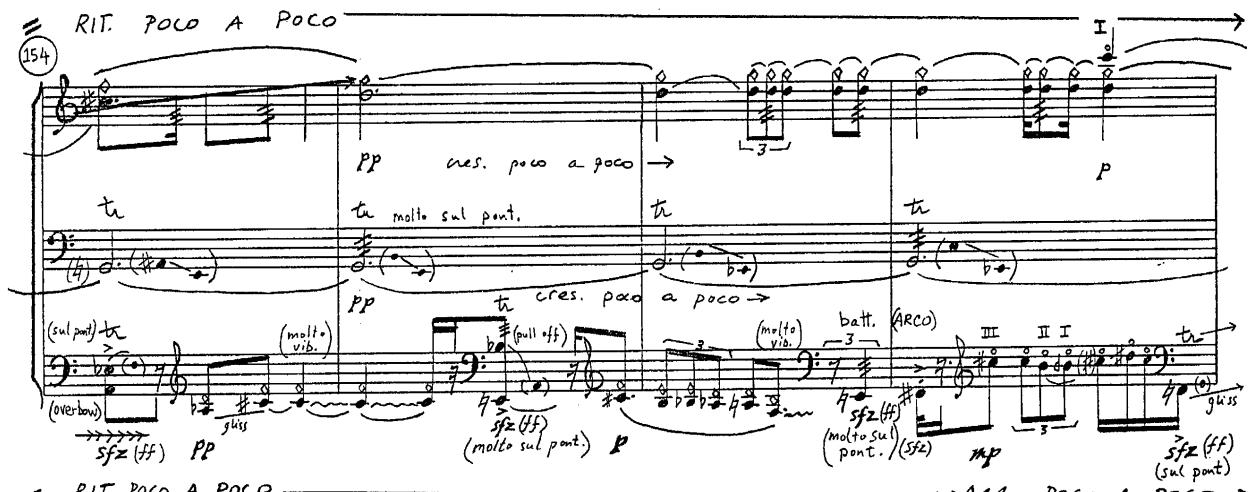
## RIT. POCO A POCO → (♩ = 56)

stop ascent (high as possible)

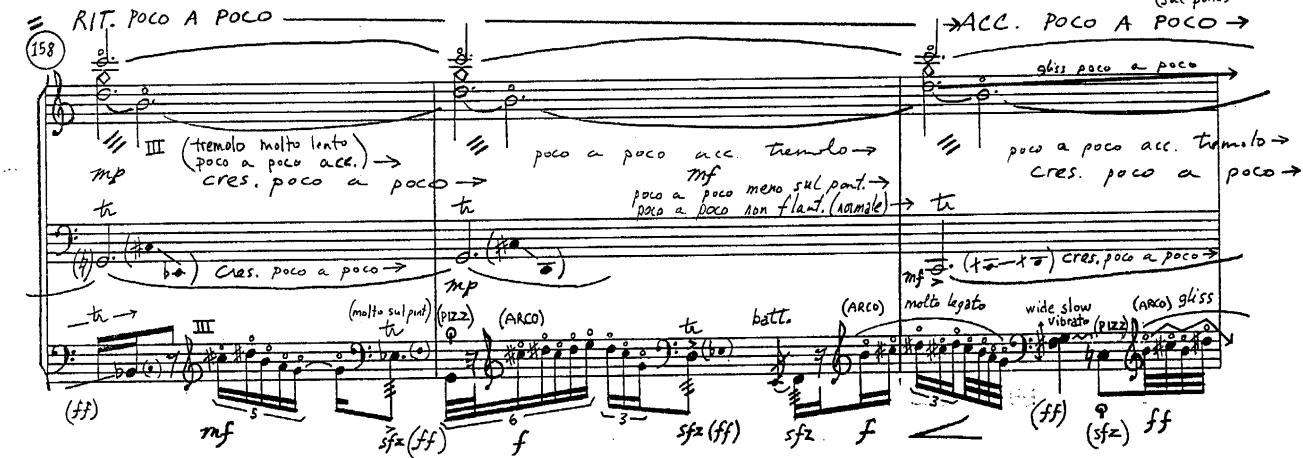
(149) 

RIT. POCO A POCO

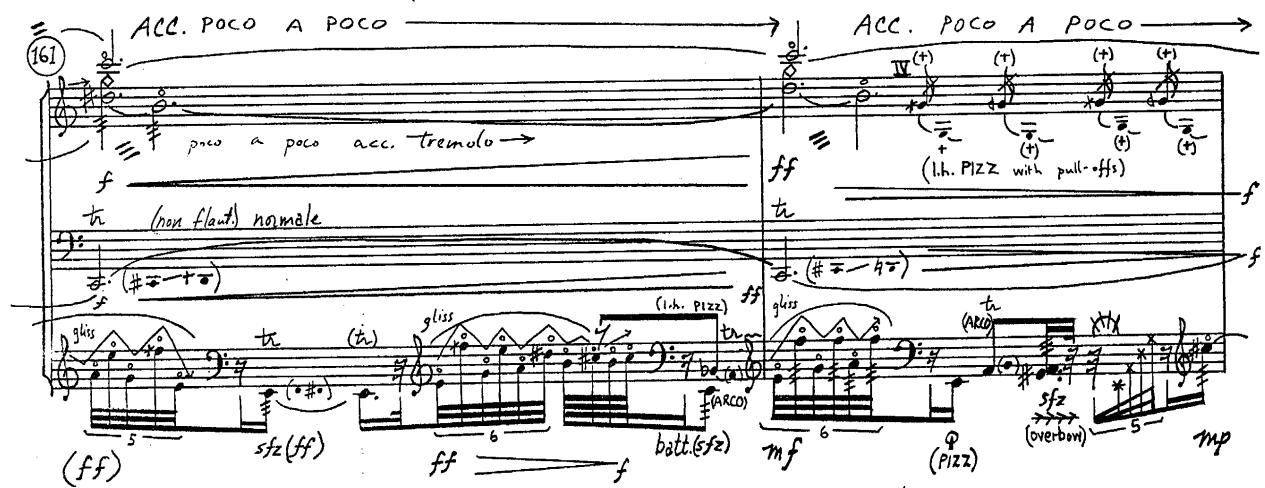
\*N.B. Cello: statistically trill  
using entire specified range  
while avoiding SOL A

(154) 

RIT. POCO A POCO

(158) 

RIT. POCO A POCO → ACC. POCO A POCO →

(161) 

ACC. POCO A POCO →

RIT. POCO A POCO

→ RIT. POCO A POCO →

163

(+) (tremolo l.h. pizz rit. molto →)

3 (f) deces. molto

4 (f)

tr.

3 (f) deces. molto

4 (f)

(mp)

sfz (ff)

sfz

pp

(≈ 48)

165

tr.

molto flaut.

cres. poco a poco →

tr - lento - poco a poco acc. →

cres. poco a poco →

cres. poco a poco →

(pp)

## POCO A POCO ACC.

\* [START GLISSANDI OF ARTIFICIAL HARMONIC, VERY SLOWLY WITH SMALL RANGE]

169

poco a poco acc. both tremolos asynchronously

(L.H. PIZZ tremolo)

tr. (fap) non flaut.

a poco → fff

cres. poco a poco →

tr - acc. → (l.h.) pizz

poco a poco sul pont.

tr (fap) non flaut.

a poco → fff (bow side of bridge) harmonic

cres. poco a poco →

(pizz) bow side of bridge

tr. poco a poco → (f) (ff) (overbow)

tr. poco a poco → ff (ARCO) (L.H.PIZZ) → (ARCO) (L.H.PIZZ)

## RIT. POCO A POCO

171

poco a poco rit. both tremolos asynchronously →

rit. gliss poco a poco →

deces. poco a poco →

rit. trill poco flaut. poco → poco & poco molto sul pont. (stop trill) (flaut.) molto sul pont.

deces. poco a poco →

(bow bridge) X

3 molto sul pont.

(overbow)

legato

molto legato

(l.h.PIZZ) (ARCO) -trill- -trill-

giss

(Continue l.h. PIZZ trill - deces. poco a poco →

deces. poco a poco →

MOLTO RIT. Poco A poco -

174

very slow gliss →

(con SORDINO)  
(short pause)

178

$\approx 66\text{--}72$  ACC. Poco A poco → PIZZ

CON SORDINO gliss  
ff sul pont.  
poco sul tasto  
(release)  $\wedge$

ARCO  
(sfz) (f)  
overbow  
gliss  
vib. molto  
gliss

BATT. col legno  
normal  
(ricochet)  
(ARCO) (gliss nat. harm)  
flaut. (molto vib.)  
mf  
(stop treble)  
(continue gliss)

181

flautando - sul pont.

PIZZ  
ARCO (normal)

(f) gliss  
vib. molto  
(sfz) (overbow)  
flautando  
(sul pont.)  
PIZZ  
ARCO (normal)  
non-legato  
(l.h. PIZZ) (rit. PIZZ)  
tremolo

184

RIT. Poco A poco →  
(normal)  
slow gliss

Battuto  
(normal)  
BATTUTO  
(normal)  
sfz  
(rit. bowing)

ACC Poco A poco →  
sul pont.  
ff  
poco sul tasto  
gliss  
f  
fff

(ACC. POCO A POCO)

187 PIZZ ARCO

188 ARCO BATT. RIT. POCO A POCO →

191 ≈66-72 ACC. POCO A POCO →

193 PIZZ ARCO (normale) RIT. POCO A POCO →

-14- (Acc. Poco A Poco →)

195

PIZZ ARCO

sul pont flautando

PIZZ ARCO

(RIT. POCO A POCO →)

gliss

3 f (sfz) (f)

4 flautando gliss (sul pont)

PIZZ ARCO BATT (normale)

gliss

3 ff (sfz) (ff) (overbow)

4 BATT gliss

(sfz) (f)

ff (sfz) (ff) (overbow)

197 (d=66-72) (Acc. Poco A Poco →)

PIZZ ARCO

flaut. #

PIZZ ARCO (RIT. Un Poco)

gliss

ff 6 f

PIZZ ARCO BATT (normale)

gliss

gliss (sfz) f

PIZZ ARCO (RIT. Un Poco)

gliss

ppp ff (sfz) (overbow) f ppp

199 (Acc. Poco A Poco →)

PIZZ ARCO

PIZZ ARCO (RIT. Un Poco)

(d=69-76) (molto vib.) PIZZ 8 ARCO

gliss

ff f

PIZZ ARCO

gliss (sfz) (overbow)

gliss (sfz) (overbow)

mf f (bow on tailpiece)

(ppp) f (overbow)

ARCO (Acc. Poco A Poco →) (sfz)

201 (molto vib.) PIZZ 8 ARCO

gliss (sfz) (overbow)

PIZZ 8 ARCO (molto vib.)

ARCO (Acc. Poco A Poco →) (sfz)

gliss ff f

gliss ff f

gliss ff f

(BATT.) (sfz) (PIZZ) (bow side of bridge) (tailpiece) (sfz) (overbow) (l.h. PIZZ) (tremolo) (side of bridge)

15. (CONTINUE  
ACC. POCO A POCO →)

(sul pont.) (moltovib.)

gliss.

(sul pont.) (moltovib.)

15↑

(sul pont.)

(d) (sul pont.)

8↑

3 f ff f

8↑

(sul pont.) ff f

8↑

(sul pont.) ff f

8↑

gliss. gliss.

gliss. gliss.

(behind) (overbow) (l.h. PIZZ) (side of) (tremolo) (bridge)

8↑

8↑

8↑

8↑

(tailpiece)

= (CONTINUE ACC. POCO A POCO →)

15↑ (simile)

ff f

8↑ (simile)

ff f

8↑ (simile)

ff f

8↑ (simile)

ff f

8↑ (BATT.)

(L.H. PIZZ)

gliss. (moltovib.) (pizz.)

gliss. ff f

= (CONTINUE ACC. POCO A POCO →)

207

gliss. (simile)

8↑ gliss.

f ff f

10 10

(pizz.)

gliss.

8↑ (GLISS.)

f 5 6

208 CONTINUED

\* GLISS L.H. CONTINUOUSLY BUT BOW EACH NOTE

208

gliss. (overbow)

11 6

(BATT.)

208 CONTINUED

208

gliss. (overbow)

12 6

(BATT.)

208 CONTINUED

(CONTINUE ACC. POCO A POCO →)

CONTINUED 208

8↑

12 12

(overbow)

8↑

13 13

(overbow)

8↑

14 14

ff

209

gliss.

8↑

12 12

(overbow)

8↑

13 13

(overbow)

8↑

14 14

ff

209

gliss.

8↑

12 12

(overbow)

8↑

13 13

(overbow)

8↑

14 14

ff

\* GLISS L.H. CONTINUOUSLY BUT BOW EACH NOTE

## RIT. POCO A POCO →

210

gliss poco a poco → (above fingerboard - natural harmonics)

poco a poco molto sul pont →

poco a poco cres. →

gliss poco a poco → (above fingerboard - natural harmonics) poco a poco molto sul pont →

poco a poco cres. →

gliss poco a poco → poco a poco molto sul pont → (above fingerboard - natural harmonics)

poco a poco cres. →

CONTINUE RIT. POCO A POCO →

211

poco a poco decres. → poco a poco flautando →

poco a poco decres. → poco a poco flautando →

poco a poco decres. → poco a poco flautando →

CONTINUE RIT. POCO A POCO →

212

molto sul pont.

molto sul pont.

molto sul pont.

molto sul pont.

to high as possible →

(molto flaut.)

to high as possible →

(molto flaut.)

to high as possible →

(molto flaut.)

Paris  
1989