

Torsten Anders

# Tempziner Modulationen

## Microtonal Notation

This score is notated in 31-tone equal temperament (which is very close to quarter-comma meantone). A quartertone sharp raises by one 31-tone step (38.71 cents), the chromatic semitone (e.g., C-C $\sharp$ ) are two steps (77.42 cents), the diatonic semitone (e.g., C-D $\flat$ ) are three steps (116.13 cents) and so forth. This temperament includes virtually just 5-limit intervals (e.g., frequency ratios  $5/4$ ,  $6/5$ ), but also virtually just 7-limit intervals (e.g.,  $7/4$ ,  $7/6$ ).

7-limit intervals are notated either as augmented intervals or using quartertone accidentals. For example, the frequency ratio  $7/4$  can be notated as augmented sixth (e.g., C-A $\sharp$ ) and  $7/6$  as augmented second (e.g., C-D $\sharp$ ). A quartertone sharp/flat raises/flattens effectively by a septimal comma  $64:63$ , the difference between a Pythagorean seventh—two stacked fourths—and a harmonic seventh. For example, the frequency ratio  $7/6$  can alternatively be notated as a minor third diminished by a quartertone flat, and  $8/7$  can be notated as a whole tone augmented by a quartertone sharp.

## Instrumentation

31-tone Fokker organ

96-tone Carrillo piano

(certain pitches of the Carrillo piano are very close to notes of the Fokker organ, with a maximum of 6 cents difference)

## Notation of the Carrillo Piano Part

The Carrillo piano part is notated twice in the full score, first in 31-tone temperament (for the convenience of the score reader) and then the performance notation (for the convenience of the musician). In the latter notation, the pitches are notated as they would be for a normally tuned piano (ranging over 96 tones). The first notation uses a single staff (as the sounding pitches are all contained in a single octave) while the second notation uses 4 staves in order to avoid very many ledger lines. The mapping for all notes between these two notations is provided on the next page.

Torsten Anders, September 2011

Piano

6

0 1 2 4 5 6 -5 -4 -3 -2 0 1 2 3 4

15<sup>mb</sup>

5

-6 -4 -3 -2 -1 0 2 3 4 5 -6 -5 -5-4-2 -1

15<sup>ma</sup>

# Tempziner Modulationen

## I

Torsten Anders

Largo ♩ = 46

Carrillo Piano

Grace notes always rather slow

*f*

5

Carrillo Piano

Grace notes always rather slow

*f*

Lowest staff two octaves down!

Ped.

Fokker Organ

Largo ♩ = 46

Man. 1 *ff*

Man. 2 *mp*

5

Pedals

*ff*

Harmony (Analysis)

harmonic 7th

harmonic 7th

subharmonic 6th

harmonic 7th

subharmonic 6th

**rit.** . . . . . **a tempo**

**Pno.**

**f** **Ped.**

**Pno.**

**Ped.**

**Org.**

**ff** **mp**

**Ped.**

**ff**

**Harm.**

*harmonic 7th* *harmonic 9th* *harmonic 7th* *harmonic 7th* *subharmonic 6th*

The image shows a page of a musical score for piano, organ, and harmonium. The score is divided into five systems. The first system is for the piano (Pno.), with a treble clef and a 2/4 time signature. It features a melodic line with a forte (f) dynamic and a pedal point. The second system is for the piano (Pno.), with both treble and bass clefs and a 2/4 time signature. It features a melodic line in the treble and a bass line with a forte (f) dynamic and a pedal point. The third system is for the organ (Org.), with a treble clef and a 2/4 time signature. It features a melodic line with a fortissimo (ff) dynamic and a mezzo-piano (mp) dynamic, and a bass line with a forte (ff) dynamic. The fourth system is for the harmonium (Harm.), with a treble clef and a 2/4 time signature. It features a melodic line with various harmonic and subharmonic markings. The fifth system is for the harmonium (Harm.), with a treble clef and a 2/4 time signature. It features a melodic line with various harmonic and subharmonic markings. The score includes tempo markings (rit. and a tempo), dynamics (f, ff, mp), and a pedal point (Ped.).

**rit.** . . . . . **a tempo**

15

Pno.

Ped.

Pno.

Ped.

Org.

Ped.

Harm.

harmonic 7th

harmonic 9th

subminor 7th

subminor 7th

subharmonic 6th

The musical score is divided into five systems. The first system is for the Pno. (Piano), with a treble clef and a 2/4 time signature. It features a melodic line with a fermata at measure 15, followed by a series of chords. Dynamics include *f* and *Ped.*. The second system is for the Pno. (Piano), with a grand staff (treble and bass clefs) and a 2/4 time signature. It features a melodic line in the treble and a bass line in the bass. Dynamics include *f* and *Ped.*. The third system is for the Org. (Organ), with a grand staff and a 2/4 time signature. It features a melodic line in the treble and a bass line in the bass. Dynamics include *ff* and *mp*. The fourth system is for the Ped. (Pedal), with a bass clef and a 2/4 time signature. It features a single note with a fermata at measure 15, followed by a series of chords. Dynamics include *ff*. The fifth system is for the Harm. (Harmonium), with a treble clef and a 2/4 time signature. It features a series of chords. Dynamics include *ff*. The score includes various markings such as *rit.*, *a tempo*, *f*, *ff*, *mp*, and *Ped.*.

Pno. 20 **rit.** ----- **a tempo**

Musical notation for the first piano staff, including notes, rests, and dynamic markings.

Pno.

Musical notation for the piano accompaniment, consisting of three staves (treble and two bass clefs).

Org. 20 **rit.** ----- **a tempo**

Musical notation for the organ solo, including notes, rests, and dynamic markings like *ff*.

Ped.

Musical notation for the pedal part, including notes and dynamic markings like *ff*.

Harm.

*subharmonic 6th*      *subminor 7th*      *subharmonic 6th*      *harmonic 9th*

Musical notation for the harmonic part with labels for specific effects: *subharmonic 6th*, *subminor 7th*, *subharmonic 6th*, and *harmonic 9th*.

25

Pno. *f* Ped.

Pno. *f* Ped.

Org. *mp*

Ped.

Harm. *harmonic 7th* *harmonic 7th* *subminor 7th* *subminor 7th*



30 **rit.** - - - - -

Pno.

Pno.

Org.

Ped.

Harm.

*subminor 7th*      *harmonic 7th*      *subharmonic 6th*      *harmonic 7th*

The image shows a musical score for four instruments: Piano (Pno.), Organ (Org.), Pedal (Ped.), and Harmonium (Harm.). The score is divided into four measures. The first measure is marked with a '30' and a 'rit.' (ritardando) instruction. The Pno. part consists of a single melodic line with a fermata. The second Pno. part is a grand staff with a melodic line in the treble clef and a bass line in the bass clef. The Org. part has a melodic line in the treble clef and a bass line in the bass clef. The Ped. part is a single bass line with a fermata. The Harm. part is a single melodic line with a fermata. The chord labels are: subminor 7th, harmonic 7th, subharmonic 6th, and harmonic 7th.

II

Con brio  $\text{♩} = 38$

rit. . . . .

Fokker Organ

Pedals

Harmony (Analysis)

Scale (Analysis)



Poco meno mosso

Solo

35 -

Org.

Ped.

Harm.

Scale

40 **rit.** ----- **Meno mosso** **A tempo**

Org. *p* *f*

Ped.

Harm. french 6th harmonic 9th harmonic 7th 11-limit ASS Pepper's Square harmonic 7th Hendrix chord subminor 7th Pepper's Square

Scale

**Poco meno mosso**

45 **rit.** Solo

Org. *p*

Ped. *p* *p*

Harm. subharmonic 6th harmonic 7th

Scale

**rit.** **Meno mosso** **A tempo**

Org. *p* *f*

Ped.

Harm. Modulation chord

Scale *subminor 7th harmonic 7th subharmonic 6th* *Pepper's Square harmonic 7th* *french 6th subminor 7th subharmonic 6th* *harmonic 7th* *Hahn pentachordal*

**Poco meno mosso** **rit.**

Org. *p*

Ped.

Harm. *harmonic 7th*

Scale

*Solo*

**rit.** ----- **Meno mosso** ----- **A tempo**

Org. *p* *f*

Ped. *p*

Harm. *Pepper's Square* harmonic 7th french 6th *Pepper's Square* harmonic 7th french 6th harmonic 7th

Scale *Hahn pentachordal*

**rit.** ----- **Meno mosso** -----

Org. *p*

Ped. *f*

Harm. harmonic 7th *Pepper's Square* harmonic 7th  
11-limit ASS Hendrix chord *Pepper's Square* subminor 7th

Scale

III

Andante ♩ = 80

Carrillo Piano

70 75

*f* *pp* *f* *pp* *poco f*

Carrillo Piano

*f* *pp* *f* *pp* *poco f*

8vb

Ped.

Andante ♩ = 80

Fokker Organ

70 75

*p*

Pedals

*p*

Harmony (Analysis)

subminor 7th subminor 7th subminor 7th

Scale (Analysis)

de Vries 11-tone II

80 85

*f* *p* *poco f* *f* *pp* *p*

Pno.

*f* *p* *poco f* *f* *pp* *p*

Ped.

Org.

80 85 Solo

Ped.

*pp*

(*p* if *pp* is not possible)

Harm.

*mp*

Scale

*mp*

subminor 7th subminor 7th Pepper's Square

de Vries 11-tone II

90 95

*f*

Pno.

15<sup>mb</sup> 8<sup>vb</sup>

Org.

90 95

Ped.

Harm.

Scale

*subminor 7th* *Pepper's Square* *subminor 7th* *Pepper's Square* *subminor 7th* *subminor 7th*

*de Vries 11-tone II*



This musical score is arranged in five systems. The first system is for the Piano (Pno.), featuring a treble clef staff with a melodic line and a grand staff (treble and bass clefs) for accompaniment. The second system is for the Organ (Org.), also in a grand staff. The third system is for the Pedal (Ped.), shown as a single bass clef staff. The fourth system is for the Harmonium (Harm.), with a treble clef staff. The fifth system is for the Scale, with a treble clef staff. The score includes dynamic markings such as *pp* (pianissimo) and *f* (forte), and performance instructions like *subminor 7th*. Measure numbers 100 and 105 are indicated at the top of the page.

This musical score page contains the following staves and parts:

- Staff 1:** Treble clef, melodic line with eighth notes.
- Staff 2:** Treble clef, rapid sixteenth-note accompaniment. Includes a *mp* dynamic marking and a crescendo hairpin.
- Staff 3:** Grand staff (treble and bass clefs) for Piano (Pno.). Treble clef has sixteenth-note accompaniment; bass clef has rests. Includes a *Ped.* marking and a crescendo hairpin.
- Staff 4:** Grand staff for Organ (Org.). Treble clef has chords and a melodic line; bass clef has rests. Includes a *mp* dynamic marking.
- Staff 5:** Bass clef for Pedal (Ped.). Features a long, sustained note with a *p* dynamic marking.
- Staff 6:** Treble clef for Harmonium (Harm.). Features chords with *subminor 7th* markings.
- Staff 7:** Treble clef for Scale (Scale). Features a single note with a *subminor 7th* marking.

110

Pno.

Org.

Ped.

Harm.

Scale

*mp*

*subminor 7th*

110

Detailed description: This page of a musical score contains five staves. The top staff (Piano) features a melody of eighth notes in a major key, with a measure rest at the beginning of the second measure. The second staff (Piano) has a dense texture of sixteenth-note runs. The third staff (Piano) continues with similar sixteenth-note runs. The fourth staff (Organ) shows chords in the right hand and sustained notes in the left hand, with a dynamic marking of *mp*. The fifth staff (Pedal) has a single note at the start followed by rests. The sixth staff (Harm.) contains dotted notes with a *subminor 7th* label. The seventh staff (Scale) shows a sequence of dotted notes. The number 110 is written above the first measure of the top staff and above the first measure of the organ staff.

115

Pno.

Right hand: Treble clef, eighth notes. Left hand: Bass clef, sixteenth notes (upper) and eighth notes (lower).

115

120

Org.

Right hand: Treble clef, chords and single notes, dynamic *p* at measure 119. Left hand: Bass clef, single notes.

*p*

Ped.

Right hand: Treble clef, single notes, dynamic *p* at measure 119. Left hand: Bass clef, single notes.

Harm.

Right hand: Treble clef, single notes, dynamic *p* at measure 119. Left hand: Bass clef, single notes.

subminor 7th

subminor 7th

Scale

Right hand: Treble clef, single notes, dynamic *p* at measure 119. Left hand: Bass clef, single notes.

125

130

The musical score consists of five staves. The top staff is a single treble clef staff. The second staff is a grand staff for piano, with a treble clef on top and a bass clef on the bottom. The third staff is a grand staff for organ, with a treble clef on top and a bass clef on the bottom. The fourth staff is a single bass clef staff. The fifth staff is a single treble clef staff. The score includes dynamic markings such as *poco f*, *f*, *pp*, and *p*. It also features performance instructions like *Ped.* and *8<sup>va</sup>*. Measure numbers 125 and 130 are indicated above the first and third staves respectively. The notation includes various note values, rests, and articulation marks.

This musical score page contains five staves for different instruments: Piano (Pno.), Organ (Org.), Pedal (Ped.), Harmonium (Harm.), and Scale. The score covers measures 135 to 140. The Piano part features a melodic line with dynamics *poco f*, *f*, and *ppp*, and includes a *Ped.* marking. The Organ part has a melodic line with a *135* marking and a *140* marking. The Pedal part consists of a series of half notes with a slur. The Harmonium and Scale parts consist of a series of half notes with slurs.

135 140

*poco f* *f* *ppp*

*Ped.*

*poco f* *f* *ppp*

*Ped.*

135 140

Ped.

Harm.

Scale