



Studies in Movement (Set 1)

For Violoncello solo

Nigel Morgan

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The sonic quality of the cello is ideally suited to slow, expressive, languorous music. The instrument is also blessed with a wide compass: a rich sonorous bass register way up into the territory of the violin, and here with a powerful, unique and incisive timbre. But the music contained in these *Studies in Movement* favours lightness, speed and agility, and that dance-like fleet-of-footness found in the best Baroque performance practice, and notably in the dance movements of the six Cello Suites of J.S.Bach.

Like the Bach suites, these studies are designed for the four and five string cello: the five studies from Set 1 are scored for the conventional 4-string instrument; the four studies from Set 2 explore various *scodatura* possible with the 5-string instrument.

All nine studies are based on a sequence of 9 consecutive patterns (S85-93) taken from Nicholas Slonimsky's *Thesaurus of Scales and Melodic Patterns*. This celebrated thesaurus, beloved of jazz musicians and improvisers, was originally conceived as a resource for composers. Those who have regularly used Slonimsky's resources include such celebrated figures as John Adams and Frank Zappa. Adams has even developed his own software module called The Earbox, which he uses to impose different colours and emotional effects on more conventional scales and patterns. Since 1995 Nigel Morgan has used his own library of Slonimsky patterns as starting points for some 14 compositions in collaboration with the computer environment for music composition *Symbolic Composer*.

The Studies presented here are a preface to *Ideograms* in the composer's series *Facts of Life*. This is an expanding collection of music for instruments and Active Notation of which *Ideograms* for cello solo, designed for on-line distribution and performance, is part. Both works have been inspired by the remarkable cellist Peter Gregson, a musician who is able to bring a unique experience of Baroque techniques together with a fascination for the latest technological innovations (he has collaborated with MIT Media Lab and Banff Centre for the Arts).

Guide to Performance

Studies in Movement may be performed in any combination or order. The expressive detail contained in the markings for dynamics, tempo, articulation and timbre should only be considered as starting points towards an individual performer's interpretation. The Studies may also be used as the basis for improvisation, particularly in collaboration with live and interactive processing systems.

Accidentals only refer to the note they precede. For all studies except **Dance Figures** the rhythmic notation follows the composer's extended notation for articulation introduced in *Piece d'Orgue* and *Le Jardin Sec*.

Continuum interpolates one Slonimsky pattern with another. Each interpolation generates a sequence of six patterns, the central pivot patterns usually containing only 2 or 3 different pitches. The music is in two distinct sections: the first remains firmly on the lower two strings (C and G); in the second the music moves across to the higher two strings (D and A) via interpolations between strings G and D.

The image shows six musical patterns for the 'Continuum' study. Pattern 1 is in 3/4 time, marked *mf* and *f*. Pattern 2 is in 9/8 time, marked *mf*, *mp*, and *mf*. Pattern 3 is in 7/8 time, marked *p*, *mf*, *mp*, and *sim.*. Pattern 4 is in 4/4 time, marked *f*. Pattern 5 is in 3/4 time, marked *f*. Pattern 6 is in 7/8 time, marked *mf* and *f*.

In the above selection of extracts notice the incomplete palindrome in bar 2, which has its centre at the sixth beat.

The previously mentioned extended articulation applies to notes that are not beamed together. An un-beamed note should be considered staccato, while a staccato note should be played as an extremely short note. Therefore, bars

three and five, shown above, would be written as follows in standard notation:

The image shows two musical patterns in standard notation. Pattern 3 is in 7/8 time, marked *p*, *mf*, *mp*, and *sim.*. Pattern 5 is in 4/4 time, marked *f*.

Arrested Movement is based on the first pattern in the chosen series (S85). The intervals of this pattern are transposed to create a large collection of self-similar patterns across a pitch continuum of two octaves. These are arranged to occupy a series of slots derived from the modulation of a sine wave by a ramp wave, a device first used in the composer's *Array* (1994) for solo violin, and later in the more recent 4th Commentary for piano and cello (2007).

The image shows a musical extract for 'Arrested Movement'. It features a sequence of patterns with tempo markings: 60, 80, *allargando*, 60, and 80. Dynamic markings include *poco cresc.*, *f*, and *f*. The notation includes a pause bar and a fermata.

In the above extract note the optional tempo change between metronome marks and also the pause bar. Following each pause, of indeterminate length, the player is invited to change tempo, timbre, style of playing for the next phrase

Dance Figures employs all nine patterns, but the patterns are reduced to six-note scales. These scales create a kind of continually shifting warp of tonality colour across which is woven a weft of 'picks' of different lengths and frequency. The analogy with weaving is important as the warp maintains a set of 10 'ends' giving the music a set beat pattern and count. The cellist acts like a dancer placing movement and gesture on particular beats of the 10-count phrase. These 'dance figures' sound out as short dynamic bowed gestures accompanied by an ostinato of open strings played with left-hand *pizzicato*.



The extract above shows clearly the left-hand *pizzicato ostinato* (marked *mp sempre*). This movement is in 10/8 throughout and the upper-part uses tied notes and rests of 1/4 and 1/8 duration as an aid to counting.

Ornaments is a study examining how movement can be maintained in a very slow tempo. A melody has been constructed algorithmically to contain 9 phrases of nine pitches, each using only notes from the whole note scale (S90) starting on D. Each phrase of the melody is then ornamented in turn by pitches unique to each of the other 8 Slonimsky patterns. The rhythmic basis of the ornamentation comes from the composer's analysis of the Turkish Maqâm, a form of improvised solo for the oud that has been described as 'a melodic world in itself, based on scales of hierarchised notes and evoking all sorts of feelings, passions and ideas'.



Phrases synthesises all nine Slonimsky patterns in turn, and then projects the resulting pitch collection on to the 'play' of a white noise fractal. From this, a sequence of phrases is generated that allow the different Slonimsky patterns to form a dynamic musical continuum, similar in effect to phrases found in human speech patterns. These phrases play (for the first time in these studies) across the whole compass of the cello and include devices such as tremolo, harmonics, *glissando* and *portamento*.



Note the two forms of pitch groupings – in bar 1 a gradual slowing down, and in bar 25 a gradual speeding up – in this case from notes of 1/8 duration to those of 1/16.

Continuum

♩ = 100

Cello

mf *f* *mf* *mp* *mf* *p* *mf* *mp* *sim.*

f *mf* *f* *mf* *f* *mf* *f*

mf *f* *p* *mf* *mp* *sim.* (dynamics ad lib.)

f

sub. p *f* *p* *mf* *mp*

32 *f* *mp* *f* *mp*

Measures 32-36: Bass clef, 9/8, 5/4, 3/4, 9/16, 5/4 time signatures. Dynamics: *f*, *mp*, *f*, *mp*. Includes slurs and accents.

37 *f* *mp* *f* *mp*

Measures 37-41: Bass clef, 5/4, 3/4, 9/8, 3/4, 9/16, 9/8 time signatures. Dynamics: *f*, *mp*, *f*, *mp*. Includes slurs and accents.

42 *f* *mp* *f* *mp*

Measures 42-46: Bass clef, 9/8, 4/4, 9/8, 7/16, 7/8 time signatures. Dynamics: *f*, *mp*, *f*, *mp*. Includes slurs and accents.

47 *f* *mp* *f* *mp*

Measures 47-51: Bass clef, 7/8, 9/8, 5/4, 7/8, 5/8 time signatures. Dynamics: *f*, *mp*, *f*, *mp*. Includes slurs and accents.

52 *f* *mp* *f* *mp*

Measures 52-56: Bass clef, 5/4, 4/4, 3/4, 4/4, 2/4, 5/4 time signatures. Dynamics: *f*, *mp*, *f*, *mp*. Includes slurs and accents.

57 *f* *mp* *f* *p*

Measures 57-61: Bass clef, 5/4, 9/8, 7/8, 3/4, 3/8 time signatures. Dynamics: *f*, *mp*, *f*, *p*. Includes slurs and accents.

Arrested Motion

Cello

$\text{♩} = 120$
 $(\text{♩} = 60 \text{ ————— } 120)$ $\text{♩} = 180 \text{ ————— } 120$

mf *mf*

8 $(\text{♩} = 180 \text{ ————— } 120 \text{ ————— } 80 \text{ ————— } 120)$

poco cresc. *f* *mf*

16 $60 \text{ ————— } 80 \text{ ————— } \text{allargando} \text{ ————— } 60$ $(\text{♩} = 80 \text{ ————— } 120)$

poco cresc. *f* *f*

25 120 *a tempo (120)* *a tempo (120)*

ff *poco rall.* *f*

35 *molto rall.* *allargando* $(\text{♩} = 80 \text{ ————— } 120)$

sub. mf *f* *pizz.* *arco* *poco rall.* *pizz.*

f *f* *poco dim.*

* make these empty bars long enough to prepare the listener for a different tempo, timbre or style of playing.

43 *a tempo* (120)

Measures 43-48: Bass clef, 2/4 and 3/4 time signatures. Dynamics: *mp*, *mf*, *f*, *mf*, *mf*, *dim.*, *mp*. Includes accents and breath marks.

51

Measures 51-58: Bass clef, 2/4 and 3/4 time signatures. Dynamics: *p*, *f*, *dim.*, *mp*, *dim.*, *p*, *poco cresc.*, *mf*. Includes a tempo change from 80 to 120.

59

Measures 59-67: Bass clef, 3/4, 2/8, and 2/4 time signatures. Dynamics: *f*, *sub. pp (eco)*, *mp*, *mf*, *mf*, *f*. Includes breath marks.

68

Measures 68-76: Bass clef, 2/4 time signature. Dynamics: *sub. p*, *mf*, *cresc.*, *f*. Includes a tempo change from 70 to 120.

77

Measures 77-80: Bass clef, 3/4 and 3/4 time signatures. Dynamics: *ff*. Includes a tempo change from 120 to 150, and another from 150 to 180.

Dance Figures

Cello

$\text{♩} = 280$

mf

mp

(lh pizz. *mp* sempre)

5

mf

mp

9

f

(*mp*)

13

mp

mf

mp *mf*

mp

18

p

p

mp

poco cresc.

22

mf

26

f

sub. mf

dim.

mp

30 *sub. mf* *f* *mf*

34 *f* *mf* *f*

39 (*mf*) *mf* *f*

43 *mf* *f*

48 *mf* *f* *mf* *f* *mp*

52 *poco a poco dim.* *mf* *mp*

Ornaments

♩ = 45

Cello

Staff 1: Cello part, measures 1-4. Dynamics: *p* (measures 1-2), *mp* (measure 3), *mf* (measure 4). Includes a sixteenth-note ornament in measure 4.

Staff 2: Cello part, measures 5-8. Dynamics: *f* (measure 5), *mf* (measure 6), *p* (measure 7), *mp* (measure 8). Includes a triplet ornament in measure 6.

Staff 3: Cello part, measures 9-12. Dynamics: *p* (measure 9), *mp* (measure 10), *p* (measure 11), *mp* (measure 12). Includes triplet ornaments in measures 10 and 12.

Staff 4: Cello part, measures 13-16. Dynamics: *mf* (measure 13), *mp* (measure 14), *mf* (measure 15), *p* (measure 16). Includes a triplet ornament in measure 14.

Staff 5: Cello part, measures 17-20. Dynamics: *mf* (measure 17), *mp* (measure 18), *mf* (measure 19), *mp* (measure 20). Includes quintuplet ornaments in measures 19 and 20.

6

mp *mf* *p* *mp* *mf* *f* *mf*

7

f *p* *mf* *mp* *mf* *mp* *poco cresc.*

8

mf *mp*

9

mf *mp* *p*

Phrases

Cello

Measures 1-4: Cello part. Measure 1: $\text{♩} = 80$, $3/4$ time, *mp*. Measure 2: $7/4$ time, *p*. Measure 3: $9/8$ time, *mp*. Measure 4: $2/4$ time, *mf*. Includes fingerings 0 and 1.

5

(flautando)

Measures 5-8: *(flautando)*. Measure 5: $6/8$ time, *mp*, *ord.*. Measure 6: $5/8$ time, *mf*. Measure 7: $3/8$ time, *f*. Measure 8: $16/8$ time, *mp* to *mf*. Includes fingerings 0 and 1.

12

Measures 9-12: Measure 9: $8/16$ time, *f*. Measure 10: $5/16$ time, *f*. Measure 11: $4/4$ time, *f*. Measure 12: $2/4$ time, *ff* to *mp*.

18

(sotto voce)

Measures 13-17: Measure 13: $3/4$ time, *mf*. Measure 14: $2/8$ time, *f*. Measure 15: $2/4$ time, *f*. Measure 16: $6/4$ time, *f*. Measure 17: $5/8$ time, *p*. Includes fingerings 0 and 1. *(sotto voce)* marking above measure 17.

24

Measures 18-23: Measure 18: $2/4$ time, *mp*. Measure 19: $5/8$ time, *mp*. Measure 20: $2/4$ time, *mf*. Measure 21: $5/8$ time, *mp > p*. Measure 22: $5/8$ time, *mp*. Measure 23: $2/4$ time, *mp*.

31

mf *mp* *mf* *f* *p(echo)* *mf*

38

f *cresc.* *ff* *mp*

lontano *(slow gliss.)*

45

(portamento)

mf *f* *mf* *mp* *mf*

51

mp *p* *mp* *mf*

Appendix: Ornaments

Cello

$\bullet = 45$

mp

3

5

7 (III)

9

The musical score is written for Cello in 9/4 time, marked *mp* and tempo $\bullet = 45$. It consists of five staves of music. The first staff begins with a tempo marking and a dynamic marking. The second staff is marked with a '3' and contains a triplet of eighth notes. The third staff is marked with a '5' and contains a quintuplet of eighth notes. The fourth staff is marked with a '7' and contains a septuplet of eighth notes. The fifth staff is marked with a '9' and contains a nonuplet of eighth notes. Various ornaments and fingerings are indicated by Roman numerals: III, II, IV, and (III).