Joseph Klein

Occam's Razor
seven studies for ten players

(1994-99)

supported by a Composer Fellowship from the National Endowment for the Arts, a federal agency, and by a Faculty Research Grant from the University of North Texas

duration: c. 22’
INSTRUMENTATION

- flute / alto flute / piccolo
- English horn
- clarinet in A & B♭ / bass clarinet in B♭
- trumpet in C & B♭
- horn in F
- harp
- harpsichord
- viola
- contrabass

percussion (1 player):

marimba, vibraphone, glockenspiel, chimes, 4 tom-toms, 2 tam-tams, China cymbal, 2 suspended cymbals, ratchet, vibraslap, wood block, brake drum

2 tuned bell plates*, wood chimes, glass chimes (suspended from dome of China cymbal), alarm clock (w/ bell), metal shaker

* if these pitches are not available, any two bell plates a tritone apart (and in the same general register) may be substituted.

- Flute requires B foot (out-of-range passages may be played on alto flute if such an instrument is unavailable).
- Bass clarinet should extend to a low written C (out-of-range pitches may be played an octave higher if such an instrument is unavailable).
- Horn requires a standard mute, and optional stopping mute; recommended instrument is a double descant (B-flat/high F) horn with A+ stopping valve (movement III, m. 9 is easier to play transposed with the A valve depressed).
- Trumpet requires straight, cup, harmon, bucket, felt hat, and plunger mutes.
- Percussionist requires the following striking implements: yarn mallets (2 soft, 2 medium, 4 hard), rubber mallets (2 medium, 2 hard), 2 hard plastic, 2 chime hammers, tam-tam beater. The vibraphone is to be prepared in movement VI (mm. 56-64) by taping quarters near the nodes of the specified bars; the resulting effect should be a sustained buzzing when the bars are struck. The small tam-tam is to be prepared by clamping a large metal coil to the lip, resulting in a metallic rattling sound when struck (movement VII). The China cymbal is to be prepared by suspending the glass chimes from the dome and allowing them to hang over the edge (movement V). The small suspended cymbal is to be prepared with a light gauge chain (“sizzle”) attached at the dome (movement VII).
- Harpsichord must be tuned in equal temperament at A=440, and requires two manuals: the lower manual (I) requires 8’, 4’, and lute stops; the upper manual (II) requires an 8’ stop that can be coupled with the lower manual. Subtle amplification may be used only if absolutely necessary.
- Contrabass requires C extension (out-of-range pitches may be played an octave higher if such an instrument is unavailable).
NOTES

- Score is notated in concert pitch; all instruments sound as written with the following exceptions:
  - piccolo sounds one octave higher than written
  - glockenspiel sounds two octaves higher than written
  - harp harmonics sound one octave higher than written
  - harpsichord on 4’ stop sounds one octave higher than written

- Accidentals apply only to the notes they immediately precede, with the exception of repeated pitches.

- The ensemble may be set up in one of two configurations:

Setup A

Setup B
NOTES (cont.)

Movement I — Dynamics and phrasing must remain consistent throughout, with only a slight crescendo in measures 88-89. In the coda (measures 90-96), the marimba and harpsichord should be perceived as echoes of the clarinet.

Movement II — The harp should be prominent in measures 1-26 and measures 47-52; all other instruments should be equally balanced. Interrupting sections should be quite distinct, set off by the forceful sforzando attacks.

Movement III — In ten of the thirteen brief variations, one instrument should be prominent: viola (m. 1), horn (m. 5), harp (m. 7), piccolo (m. 11), trumpet (m. 13), clarinet (m. 15), contrabass (m. 19), marimba (m. 21), harpsichord (m. 23), and English horn (m. 25). In measures 3, 9, and 17, instruments should be equally balanced. During the silences, players should remain as still as possible and the conductor’s gestures should be restricted to a minimum.

Movement IV — The harp and harpsichord are prominent from the beginning of the movement, and should be perceived as a single, continuous entity. Though the trumpet and horn are also linked throughout this movement, the remaining instruments are to maintain some degree of independence and individuality until the texture becomes saturated. Beginning around measure 55 through the end of the movement, group accents must be clearly defined. The pause between movements IV and V must be substantial — significantly longer than those between any of the other movements (see note on page 63 of the score).

Movement V — Beginning in measure 7, the effect should be one of disintegration, with the harp and harpsichord gradually emerging from the texture. In measures 6-13, the chime-glissandi grace notes into the China cymbal (prepared with the glass chimes, as indicated above) should be executed as a single rapid gesture, with the right-hand mallet striking the China cymbal (thus activating the glass chimes as well) as it comes off of the chime tubes. Beamed flourishes in the harp and harpsichord should be executed as rapidly as possible (though it is not necessary for them to be rhythmically even) and allowed to resonate indefinitely; this is particularly critical in measures 21-48, where no other instruments are playing. The harp pedal changes should be executed as discreetly as possible — although to some extent, the extraneous sound produced by the harp pedals and the harpsichord action are important by-products of the music throughout this section.

Movement VI — The ritornelli (measures 1-4, 19-24, 77-84, and 93-103) should be distinct at each occurrence. The section in measures 25-41 consists of two accompanied solos — piccolo with harpsichord and contrabass with vibraphone; attacks in the accompanying instruments always initiate phrases in the respective solo instrument, and must therefore be precisely coordinated. This is also the case in measures 65-76, where the bass clarinet and trumpet are accompanied by the harp and viola, respectively. Measures 55-64 are intended as a parody of measures 42-55, where the piccolo, horn, vibraphone, harpsichord, and contrabass present a caricature of the bass clarinet, English horn, harp, trumpet, and viola, respectively.

Movement VII — The harp, harpsichord, viola, and contrabass should be equally balanced and each should maintain its independence in measures 1-40. The percussion entrances must be clearly heard, but should seem somewhat more remote than the other instruments through measure 37. Beginning around measure 25, the four stringed instruments become increasingly active, but should not necessarily increase in volume. This process continues (later joined by percussion) through the end of the movement, becoming more chaotic and building momentum throughout. The percussion part in particular should seem increasingly frantic, as the player attempts to activate all the instruments as indicated (though the bell plate attacks must remain relatively calm throughout). Mobile events in the viola, contrabass, and harp (beginning in measure 50) should become increasingly dense, particularly beginning in measure 56, as the percussion continues ad libitum. The wind drones beginning in measure 46 should be clearly audible, but must remain in the background.
SYMBOLS

. clean, distinct release/break in sound

Ø senza tempo

(perc.) percussion: depress pedal for the duration of the line

→ → → gradual change from one mode of play to another

smooth, even portamento/glissando

special timbral effect (as described in score, movement VII, mm.46-62)

→ rapid change from one mode of play to another

chromatic cluster (indeterminate pitch)

G# → harp: pedal glissando

pdt harp: play near the soundboard

continue as indicated

chromatic cluster (within specified range)

harp: short, rapid glissando ("gushing chord")

→ rapidly re-articulate the given pitch as indicated by the small beamed grouping

"white key" cluster (indeterminate pitch)

harp: thunder effect (violently glissando downward from note indicated, allowing strings to rattle)

play beamed group as rapidly as possible

chromatic cluster (within specified range)

harp: half-pedal (string buzz)

accelerando

knock on resonant part of instrument's body

harp: scrape along wound string

ritardando

winds: flaut tongue

strings: overpressure (bow with such force as to create scratching sound)

play material within repeat brackets in the order indicated for the duration of the solid line

winds: sing pitch (diamond-shaped notehead) while playing ordinary tone (oval notehead)

strings: snap pizzicato

play material within brackets (ad libitum) for the duration of the wavy line

brass: closed (mute); horn: stopped

strings: play between bridge and tailpiece

brass: open

brass: fingerings

strings: muffle strings with left hand while playing pizzicato (resulting in a dry, percussive sound)
PROGRAM NOTES

Composed between May of 1994 and February of 1999, *Occam's Razor* is a collection of seven brief studies for ten players intended as an exploration of a variety of musical procedures, structural devices, and interdisciplinary references. Numerical sequences serve as the basic organizing element, from the micro-level rhythmic and pitch cells, to movement durations (resulting in a proportional ratio of 7:8:5:11:6:10:9), to the instrumentation itself (one percussion, two brass, three woodwinds, four strings). Moreover, the work is constructed as a dynamic unfolding of "sub-ensembles" within the whole; thus, the work comprises ten solo sections, nine duos, eight trios, etc., with only a single section that includes the entire complement of ten players. The work’s title refers to a principle devised by the English philosopher William of Occam (c.1285 - c.1349) which states that where more than one theory exists, the simplest one should be applied; also known as the law of parsimony, "Occam's Razor" implies a degree of complexity beyond that which is manifest.

The first study of the set, *estuary* (chaotic fugato quasi toccata), takes as its metaphorical model a geological formation—specifically, the point where a river is met by the tides at an inlet of the sea. The movement is loosely fugal, though the character is reminiscent of a toccata (a rapid, florid, introductory movement); in this instance, the structure is derived from chaos theory, whereby erratic oscillations create bifurcations within the texture (musically represented by the splitting of a single line, first into two parts, then four, then seven). The point at which a river meets the sea displays a similar type of turbulent behavior.

The second study, *au seuil de la ruine* (notturno interrotto), is in two equal parts, the first of which consists of a cluster derived from two octatonic collections (pivoting around a central E-flat) which undergoes a gradual registral expansion and rhythmic compression. This opening section is interrupted by three brief, unrelated episodes, the first of which returns prior to a highly condensed recapitulation of the opening section in retrograde. The movement’s title ("on the threshold of decay") refers to a painting by surrealist artist René Magritte, *Au Seuil de la Liberté* (On the Threshold of Liberty, 1929), as considered through the deconstructionist prism of Jacques Derrida.

The third study, *one of many circles* (hyperfractal variants), consists simply of thirteen brief statements of a motive in various guises. The distilled, self-similar quality of these variants reflects the influence of fractal geometry—a term coined by Belgian mathematician Benoît Mandelbrot to classify those fragmented and irregular structures that are not represented in classic Euclidean geometry. The title is from a line in Wallace Stevens’ poem "Thirteen Ways of Looking at a Blackbird" (1917), which also served as a model for this study.

The fourth study, *maßenkristalle* (loxodromic chaconne), is modeled after the Baroque chaconne, or continuous variation process. The chaconne subject consists of an eleven-note row which gradually spirals upward in pitch while simultaneously descending in register through a series of octave displacements; thus, it is similar in design to a loxodrome—an imaginary line on the surface of a sphere which is oblique to the equator, crossing all meridians at the same angle in a spiral path toward the pole. The title is from an essay by Elias Canetti's book *Maffe und Macht* (Crowds and Power, 1960) and refers to the loss of individual identity experienced during the formation of a crowd, initiated by what Canetti refers to as Maßenkristalle or "crowd crystals."

The fifth study, *the myth of eternal return* (entropic ostinato), consists of a disintegrating ostinato texture that is followed by a brief coda reminiscent of the second movement: the title comes from the opening ruminations of Milan Kundera’s novel *The Unbearable Lightness of Being* (1984), in which the author reflects upon (and ultimately rejects) Friedrich Nietzsche’s concept of eternal return. Kundera’s contemplation of an existence that recurs ad infinitum—becoming “a solid mass, permanently protuberant”—and the inherent weight of such a burden is the basic premise of the novel, and the conceptual germ of this movement.

The sixth study, *crown knots & cascades* (meta-rondo in chiasmus), consists of two intertwined processes: the first process is associated with a core unit of three instruments—bass clarinet, trumpet, and viola—and is characterized by a decrease in tempo (from MM 180 to MM 90) and unit size (from seven to three instruments) throughout; the second process is associated with a core unit of three different instruments—piccolo, harpsichord, and contrabass—and is characterized by an increase in tempo (from MM 60 to MM 120) and unit size (from three to seven). These two processes are presented in alternation, resulting in a palindrome that crosses at brief overlapping solos in the trumpet and harpsichord. The title is drawn from a line in Alice Fulton’s poem “Volunteers” (from *Sensual Math*, 1995), part of a sequence that draws upon genetic crossover as a significant aspect of its trope and subject.

The seventh study, *time’s maw* (moto perpetuo), deals with the perception of time and its passage. The title is borrowed from a line in John Ashbery's poem “All and Some” (from the collection *Self-Portrait in a Convex Mirror*, 1974), and the musical model is that of *à moto perpetuo* (a short piece built upon repetitive patterns). The pitch material is derived from “The Westminster Chimes” melody, which is subjected to various temporal and pitch distortions, and a kinetic intensification that ultimately leads to a complete textural saturation.

*Occam’s Razor* was supported in part by a Composer Fellowship from the National Endowment for the Arts and a Faculty Research Grant from the University of North Texas. The complete work was premiered on 8 March 1999 at the University of North Texas by the UNT Faculty Chamber Ensemble, conducted by the composer.
I. estuary (chaotic fugato quasi toccata)

II. au seuil de la ruine (notturno interrotto)

III. one of many circles (hyperfractal variants)

IV. maßenkristalle (loxodromic chaconne)

V. the myth of eternal return (entropic ostinato)

VI. crown knots & cascades (meta-rondo in chiasmus)

VII. time’s maw (moto perpetuo)
Occam's Razor
seven studies for ten players

I. estuary
(chaotic fugato quasi toccata)

Murmuring $\frac{\dot{q}}{\ddot{q}} = 150$

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HCD

AFL

EH

CL

TP

HN

PR

HP

HCD

VA

CB
PERC: continue in original tempo, senza ritardando
(i.e., do not follow conductor) through measure 89.
null
Fleeting (*senza tempo*)

PPP barely audible, as a whisper
Emerging  \( \cdot = 60 \)
Exuberant  $\downarrow = 90 \ (\leftarrow \downarrow = \rightarrow)$

\[ q = 90 \]
Calm (senza tempo)

10"
Capricious  $\frac{b}{\bar{b}} = 120$
Exuberant $\downarrow = 90$ (← $\frac{5}{4}$ →)
III. one of many circles

(hyperfractal variants)

Fluid $\nu = 114 (\nu = 57; \nu = 38)$

ENGLISH HORN

HARP

TRUMPET (C)

HORN

CLARINET (B)

PERCUSSION

VIOLA

CONTRABASS

ALTO FLUTE/PICCOLO

VIBRAPHONE w/ med. yarn

MARBEMA w/ med. yarn

pp
IV. maßenkristalle
(loxodromic chaconne)

Impending $\downarrow = 76$ ($\leftarrow \downarrow = \rightarrow$)

- FLUTE
- ENGLISH HORN
- BASS CLARINET
- TRUMPET
- HORN
- PERCUSSION
- HARP
- HARPSICHORD
- VIOLA
- CONTRABASS
mute (straight)
cover w/ felt hat

+3

3

3

3

3

3

3

3

3

3

3

3

3

3
NOTE: In order for the opening of movement V to be most effective, the pause between movements IV and V should be substantial and deliberate (at least one minute), but must not seem unnatural. During this pause, the conductor may mop his/her brow with a handkerchief, the wind players should empty/clean out their instruments, the percussionist may adjust his setup, etc. If any tuning takes place at this time, it should be brief and subtle, and restricted to individual players (i.e., a general *tutti* tuning — as at the beginning — must *not* occur).
V. the myth of eternal return

(entropic ostinato)

Relentless $\downarrow = 76$

FLUTE

ENGLISH HORN

BASS CLARINET

TRUMPET (B)

HORN

PERCUSSION

TOM-TOMS w/ hard yarn

TAM-TAM

HARP

HARPSCORD

VIOLA

CONTRABASS

LH & RH: hard yarn (inside); hard plastic (outside)

(poco)
HARP & HARPSICHORD: Beamed note groupings should be executed as rapidly as possible (though not necessarily evenly), and must last no longer than the duration indicated parenthetically.
accel.  

(\text{\textsc{\textcopyright} = 136})
CODA: "microrounds"
Languid \( \frac{q}{\frac{52}{4}} \) (\( \leftarrow \frac{\circ}{\rightarrow} \))
Ironic — «Parodie» (l'istesso tempo)
Anxious $\downarrow = 90$
Volatile \( \frac{\text{b}}{= 120} \)

- 101 -
Mechanical $\cdot = 72$

**ALTO FLUTE**
- remove headjoint

**ENGLISH HORN**

- remove mouthpiece

**BASS CLARINET**
- remove tuning slide

**TRUMPET (C)**
- remove tuning slide(s)

**HORN**
- remove tuning slide(s)

**PERCUSSION**

**HARP**

- $mf$ secco

**HARPSCORD**

- $mf$ secco

**VIOLA**

- $pizz.$

**CONTRABASS**

- $mf$ secco
ossia: if double-stops are impractical, lower notes may be eliminated
* PERCUSSION: Continue playing bell plates (top staff) in tempo; other instruments (bottom staff) should be played freely, approximately following the proportional relationships indicated. The natural kineticism that results from the rapid change of instruments and striking implements should not be suppressed!
* VIOLA: Continue playing rapidly yet erratically; it is not necessary to stay within the measures—broken barlines are for reference only.
WOODWINDS: Buzz lips into instrument (quasi brass embouchure) while fingering lowest note; BRASS: Play pedal tones with valves depressed halfway (alternating them ad libitum). It may be necessary to play with greater air pressure than usual in order to attain the dynamic level indicated.
*HARPSICHORD*: Repeat flourishes rapidly yet erratically; do not attempt to coordinate hands; breaks between note groups must be very brief.
* See note below

* VIOLA & CONTRABASS: Play events within the brackets in any order, *ad libitum*, for the duration of the wavy line.
* HARPSCPORD: Right hand continues uninterrupted; left hand is occasionally discontinued by aggressive forearm clusters.
Continue in the same manner (ad libitum), reacting to the rest of the ensemble; become increasingly agitated and frenetic while simultaneously maintaining the relative calm and regularity of the gong attacks.