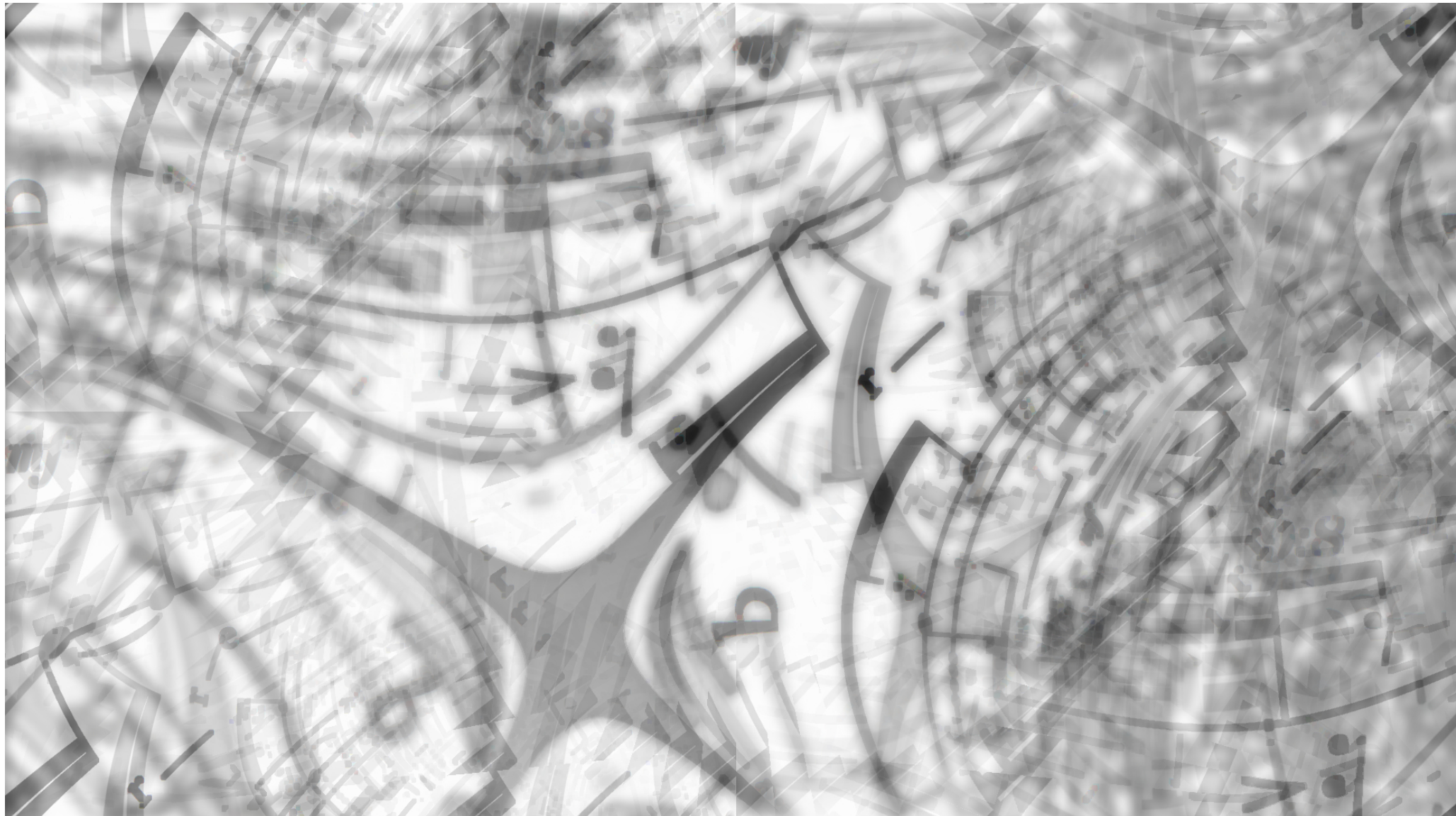


DICHRROMACY (2015)

for soprano and processed typewriter



ANDREW A. WATTS

COUNTERPOINT
PRINTWORKS

CP-030

Program Note

Dichromacy was composed in the winter of 2015 for soprano Tony Arnold's May residency at Stanford University. Other than the human voice, musical instruments convey primarily abstraction through sound content. We interpret these sounds as music to varying degrees, but if one were to step away from the cultural associations, the noise would remain highly ambiguous. With a typewriter the sounds inherent in the machine's use also contain linguistic meaning. Having this added layer to work with, I paired the text and the sounds in a multitude of ways, even utilizing the ambiguity of semantic meaning with the ill-defined meaning of typewriter sounds. Rather than a typical accompaniment for a solo soprano piece, like as a piano, it would be much more interesting and musically fertile to have her singing lyrics which are actively being typed in the background. Not only is the text being transformed into sound through the vocal line, but also the hammering away of the typewriter.

TEXT:*

I. White (#FFFFFF)
[none]

II. Cool_Black (#000000) – “Cold, bracing. Unlit coal. Inky chic.”
_k o ũ l d _ _ _ _ b r e I s I ŋ _ _ _ _ _ Λ n l I t _ _ _ k o ũ l _ _ _ _ _ I ŋ k i _ _ _ f i k _

III. Navy (#000080) – “Dark wan. Jet. Moonless midnight.”
_ _ _ _ _ d a r k _ _ _ w a n _ _ _ _ _ dʒ ε t _ _ m u n l θ s _ _ _ _ m I d n a I t _ _ _ _ _

IV. Dark_Blue (#00008B) – “Wicked steel, powder slate, clandestine cobalt.”
w I k θ d _ _ s t i l _ _ _ p a ũ d θ r _ _ s l e I t _ _ _ k l æ n d ε s t I n _ _ k o ũ b ɔ l t _

V. Duke_Blue (#00009C) – “Marquis cuff, hit don. Count. Liege, liege, liege.”
_ _ _ _ _ m a r k i _ k Λ f _ _ h I t _ _ d a n _ _ _ k a ũ n t _ l i dʒ _ _ _ l i dʒ _ _ l i dʒ

VI. Medium_Blue (#0000CD) – “Mean, mean channeler. Royal spiritualist.”
_ _ _ _ m i n m i n _ _ _ _ _ tʃ æ n ə l θ r _ r ɔ I ə l _ s p I r I tʃ ə w ə l I s t _ _ _ _ _

VII. Blue (#0000FF) – “Dismal Prussian azure. Electric ice.”
_ _ _ _ d I z m ə l _ _ p r Λ f θ n _ _ _ _ _ æ ʒ θ r _ _ _ _ _ I l ε k t r I k _ _ a I s _ _ _ _ _

VIII. Electric_Ultramarine (#3F00FF) – “Cerulean gray. Stirring, dynamic battery.”
_ _ _ s θ r u l i θ n _ g r e I _ _ _ _ _ s t θ r I ŋ d a I n æ m I k _ _ _ _ _ b æ t θ r i _ _ _ _ _

IX. Indigo (#4B0082) – “Sea, sky, sea, sea, sea, sea, sky, sky, sea.”
_ _ _ s i _ s k a I _ s i _ s i _ s i _ s i _ s k a I _ s k a I _ s i _ s i _ s i _ s i _ s i _ _ _

X. Patriarch (#800080) – “Arresting leader. Strong senior, elder, pater.”
_ _ _ θ r ε s t I ŋ _ l i d θ r s t r ɔ ŋ _ _ _ s i n j θ r _ _ _ ε l d θ r _ p e I t θ r _ _ _ _ _

XI. Vivid_Orchard (#CC00FF) – “Lucid grange, glaring acres, bold soil.”
_ _ _ l u s θ d _ _ g r e I n dʒ _ _ _ g l ε r I ŋ _ _ _ _ _ e I k ʒ r z _ _ b o ũ l d _ s ɔ I l _ _ _

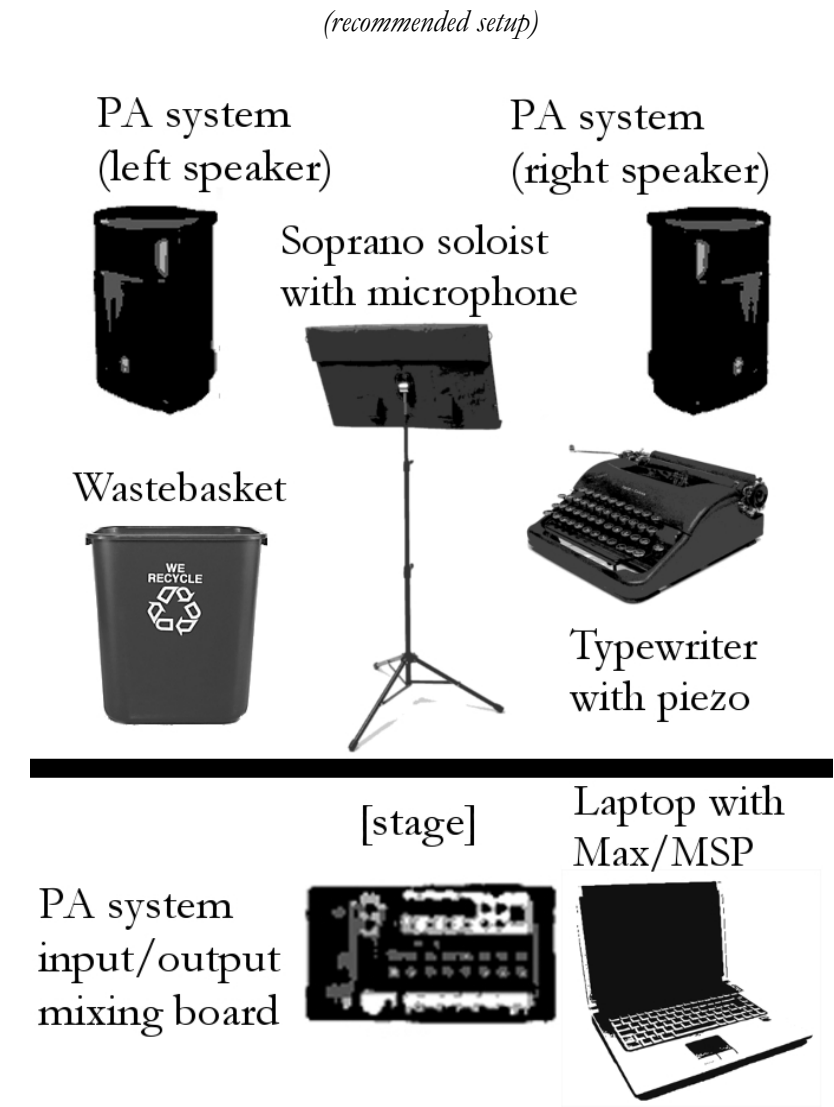
XII. White (#FFFFFF)
[none]

*The underscore (_) is included here to represent the space bar action in the performance.
The text and cover page image was created by Andrew A. Watts.

Instrumentation

- Soprano with microphone (no effects)
- Typewriter
- Piezo fastened as close to the point where the keys make contact with the page during typing
- Laptop with Max/MSP
- PA system (stereo: right and left speakers)
- Mixing board for PA system (optional but recommended)
- A few blank sheets of letter size (8.5” x 11”) paper
- Wastebasket or small office recycling bin

This piece may be performed one of two ways. Option #1 (preferred): the soprano plays the typewriter during the live concert. The top line of the typewriter notation is always in unison with the vocal attacks and may any alpha-numeric key(s) the soloist wishes to facilitate ease of execution. Attempting to type the same text as is being sung through the lyrics is discouraged, as it make no difference on the sound being processed. The “x” noteheads in the typewriter part, shown as underscore (_) in this preface, are the uses of spacebar. Unlike the keys, these are never aligned with the vocal attacks. Option #2: if a manual typewriter is not available or the soprano is unable to play the typewriter part during the live performance then a pre-recorded typewriter accompaniment is possible.



required cables not shown in diagram

Performance Notes

Duration (approx.):*

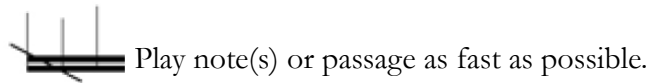
- I. White: 0'20"
- II. Cool Black: 0'56"
- III. Navy: 0'24"
- IV. Dark Blue: 0'44"
- V. Duke Blue: 0'21"
- VI. Medium Blue: 0'43"
- VII. Blue: 0'39"
- VIII. Electric Ultramarine: 0'39"
- IX. Indigo: 0'42"
- X. Patriarch: 0'21"
- XI. Vivid Orchard: 0'20"
- XII. White: 0'52"

*Movements are NOT to be played attacca. The duration of the breaks between the movements should be gauged at the discretion of the soloist and reflect the musical nature of each.

Accidentals apply only in the measure and register in which they appear.

Grace notes always occur before the beat or note they are going to.

Feathered beaming- rhythmic accelerando and ritardando (notated below).



Diminuendo al niente/Crescendo da niente, niente is performed as pantomime.



An arrow means transition (gradual) between the mode of tone production of the first element and the last element of the sequence. The same as above, is applied solely to transitions between phonetic specifications.

Stems connected to glissandi lines are used merely as guides to help indicate the meter (i.e. where the beat is in relation to the slide). Please do not accent these. Rather, re-articulate freely and staggered according to the demands of the phrase.

The secondary symbol “z” added to the stem of a note signifies that the action specified is to be executed with indrawn breath.

Trills are always very fast and at an irregular, constantly changing small interval.

Sprechgesang may be melodically defined or not. Usually exactly specified in context. When not, the rule is: on one line, non-changing pitch: on a stave system, change according to the given pitches: in a pitch space, relatively high or low according to position in relation to the upper and lower defining lines.

X = Whispered (voiceless) sounds.

O = Open, not muted.

+ = Mute/muffle with hand over mouth.

◊ = Sounds which, although largely consisting of breath sounds, are nevertheless sufficiently voiced to enable definite pitches to be distinguished. Somewhat hoarse quality.

◆ = A timbre even nearer to normal sung tone, but still with a perceptible element of breath sounds. It is intended that the timbres indicated by the symbols above should provide a more or less flexible scale of values connecting “Whisper” with “Normal”. The exact proportion of breath sound to sung pitch is generally fixed by the musical context in each instance.

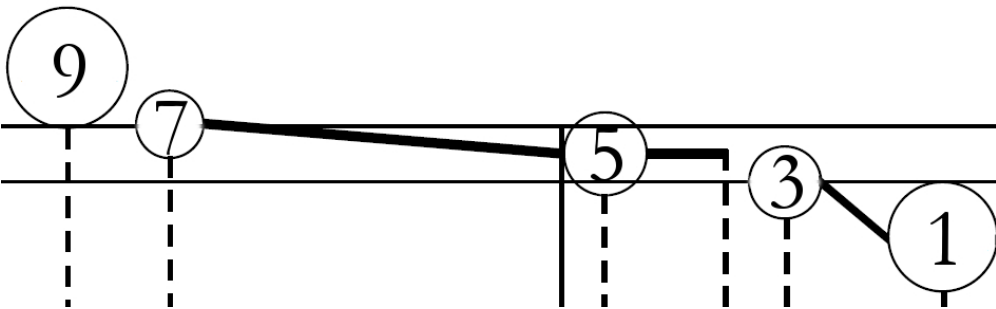
⦿ = Plosive performed with lips tight together, then forced apart by the airstream. Results in a low popping sound, similar to a popping cork.

● = Vocal fry: a creaking, gritty, rough, raw sound.

▲ = Sing the highest pitch possible.

▼ = Sing the lowest pitch possible.

Envelope diagram [example]



The 1 through 9 values represent the gain of the typewriter effects at any given time. Please note that this should be controlled by the same person in charge of the MAX/MSP effect patches during the concert and NOT by the soprano soloist. Additionally, please be aware that these are estimations. The acoustics of the performance space should certainly be taken into consideration and, if necessary, given priority over these gain expressions.

Pantomime (pant.)- silently mouthing the indicated text. Most often this is used as a transitional starting or end point for dynamic motion.

Phonetic Symbols

- a = as in father
- ɑ = as in law, guard
- ʌ = as in but
- æ = as in bad
- b = as in bed, but
- d = as in day
- dʒ = as in just
- e = as in day, but without (ɪ) vanish-sound
- ɛ = as in French misère
- ə = as in better
- g = as in give
- i = as in be, feed
- ɪ = as in bit, hymn, in
- k = as in French coup – k without breath
- l = as in look
- ɭ = retroflex ɭ as in original
- m = as in much
- n = as in never
- ŋ = as in ring
- o = as in obey, German sohn
- ɔ = as in oral, ostentatious
- p = as in French père – p without breath
- r = as in Italian raro, at tip of the tongue
- s = as in see
- ʃ = as in show
- t = as in French teint – t without breath
- tʃ = as in chin
- u = as in do
- ʊ = as in put
- w = as in well
- z = as in zea
- ʒ = as in vision

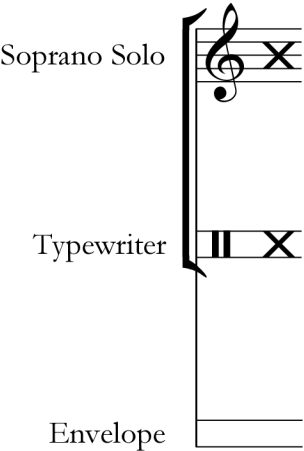
written for Tony Arnold

DICHROMACY

I. WHITE

Andrew A. Watts (2015)

Senza misura



Instructions for Preparation:
Before starting make sure that there is a sheet of paper already in the typewriter. This preloaded page must already have been typed on (typically a page saved from rehearsals). Next to the tyewriter there should be at least one blank (unused) sheet of paper. Also, on the floor next to where the soloist will be standing near the typewriter there should be a wastebasket or small office recycling bin (visible to the audience). The piece begins with the soloist walking in from off stage. It is preferred that the soloist is not visible off stage, however, this should not be a priority. Additionally, if possible, there should be no applause during the entrance. Throughout this first movement (and also in the final movement) the soloist is acting as though there is no audience. All other movements should be treated in a normal performer-audience manner.

≡

approx. 50 sec



Casually walk to the typewriter from off stage (unrushed). The focus should be on the typewriter; do NOT acknowledge the audience at this point. Once standing at the typewriter, pause for a few seconds and study the preexisting text on the page, concentrating hard in silence. Afterwards take a moment to remove the page from the typewriter, still maintaining an expression of deep thought. Then, abruptly and unceremoniously crumple the used page into a ball and toss (or drop) it into the nearby wastebasket (office recycling bin). During this gesture the expression should be that of dissatisfaction and contained frustration. The movement ends with the soloist loading a new, blank sheet of paper into the typewriter. This last action should be carried out with a sense of routine, regularity, or even ritual. The transition to the next movement (II. Cool Black) is not attacca and the soloist is free to "break character" in order to briefly prepare for it.

II. COOL BLACK

$\text{♩} = 50$

with a dramatic speaking inflection
ord. → breath

sfpp *mp* *pp*

5:4 5:4

k → o

u → l

plosive, popping ord. → breath

sffz *mf* *pp*

9:8 7:4

d b r e

ord. *ppp* 5:4 2 5:4 3 *breve*

I s I

Typ. 5:4 9:8 7:4 5:4 5:4

Envl. 5 3 5 3

Reverb [6, 19, 37, 0]

II

16 $\frac{3}{8}$ *sfz* *sub pp* *mp* *pp*

7:4

l a n l

ord. *ppp* 5:4 5:4 5:4 *mf* 6:4 *mp* 6:4

t k → o u → l i η k

(pantomime) breath (pant.)

p 3:2 2 5:4

f i k

Typ. 6:4 3 5:4 5:4 6:4 3 3:2 5:4

Envl. 5 3 5 1 3 1

III. NAVY

1 $\text{♩} = 120$ $\frac{4}{8}$

vocal fry → ord.

sffz *p* *pp* *mf* *mp* *mf* *pp* *p*

d → a r k w → a n d̥ ε t m u n

Typ. 3 3 5 3

Envl. 3 7 3 5 3

Notch filter
Delays - samples [1000, 2000, 4000]
Reverb [65, 65, 65, 127]



6 *pp* ord. *mf* *p* *sffz* *ppoco f*

l → ə s m i → d n a i → t

Typ. 3 5:4 5:4 7:4 7:4 7:4 9:8

Envl. 5 3 7 5

IV. DARK BLUE

$\text{♩} = 120$

4/4 *pp* mf

S. Solo

1

w → I

k → ə

d

s t i l p a u

(whispered)

ord.

mp

v.f. → ord.

sffz *pp* *p*

d → ə r

(whispered)

s l e I t k

Typ.

Envl.

3 5 3 5 3

Hi-pass filter
Delays - samples [10000, 55000, 80000]
Reverb [118, 127, 112, 127]



5

ord.

pp

v.f. → ord.

sffz *pp*

l æ n d → ε

s t

(whispered)

3 sec

ord.

mp

2 sec

I n k o

(whispered)

pp *sffz*

plosive, popping

u b

ord.

mp

ɔ l t

Typ.

Envl.

5 3 5 3

V. DUKE BLUE

$\text{♩} = 76$

sprechgesang, approx. pitch/inflection
(pant.) → breath

(while inhaling) → breath

ord.

v.f.

S. Solo

Typ.

Envl.

3 1 3 7

3/4 2/4 5:4 4/4 5:4 2/4 5:4 3

m a r k i k Λ f h I t d

gliss. gliss. gliss.

p *sfz* *p* *(p)* *(p)* *sfz*

Resonant filter
Vocoder 1, 2, 3.
Delays - samples [2000, 8000, 8000]
Reverb [65, 65, 65, 127]



(whisper) → ord. → (whisper)

sim. breve sim.

S. Solo

Typ.

Envl.

5 1 3

5:4 9:8 4/4 7:4 3/4 5:4 3 5:4 9:8 2/4 9:8

ord. *sub p* (pant.) *p* (whisper) *pp* *mp* *sfz* *p* *sim.* *mp* *sfz* *p* *breve* *sim.* *mp* *sfz* *p*

a n k a u n t l i dʒ l i dʒ l i dʒ

gliss. gliss.

3 3 3

VI. MEDIUM BLUE

♩ = 60

1 8

S. Solo

Typ.

Envl.

(sung) 2 4 p sfz p sfz p 4 8 mf

m i n m i n

tʃ æ n

ə l

fast vibrato, irregular width

sffz p breve

5 3 5 3 7 5

Comb filter G1
Trem 30 (50ms sampling)
Lo-pass vari (500ms sampling)
FM Synth + Reverb [6, 19, 37, 0]

5 8 5 4 8 8

S. Solo

Typ.

Envl.

sffz p sffz p sffz tr 5:4 6:4 5:4

ə r r ɔ ɪ ə l s p ɪ r ɪ tʃ ə

w ə l i s t

5:4 5:4 5:4 6:4 5:4

7 5 7 5 9

VII. BLUE

$\text{♩} = 88$ approx. pitch/inflection

2
4

sfp *pp* 3 sec

v.f. \longrightarrow ord.

mp *p* *f*

tr

(whispered) *sub p* *tr*

S. Solo

Typ.

Envl.

5 3 1 5 3

z m ə l p r ʌ ɪ ə n æ ʒ ə r

5:4 5:4 5:4 5:4 5:4 5:4 5:4 5:4

Nonporto kwah filter
Vocoder 1, 2. Delays, Samples
(2000, 10000, 20000)
Reverb [65, 65, 65, 127]



breath \longrightarrow ord.

mp *pp* *poco f*

gliss.

2 sec

p *fp* *mf* *p*

3
4

gliss. *gliss.*

molto rit. ($\text{♩} = 50$)

S. Solo

Typ.

Envl.

5 3

I l ε k t r I k a I s

5:4 5:4 5:4 5:4 5:4 5:4 5:4 3

VIII. ELECTRIC ULTRAMARINE

2/4 ♩ = 50

S. Solo

Typ.

Envl.

(sung) *pp* *mf* *p* *ord. pp sffz p mf* *p sfz*

gliss. *tr* *6:4* *5:4* *5:4* *tr* *5:4* *gliss.* *3 sec*

s → ə r u l i ə n g r e I s t

3 5 3 5

Random filter selection
Vocoder 1. Delays, Samples
(2000, 20000, 60000)
Reverb [65, 65, 65, 127]
Pitch shift up 47 semitones



5

S. Solo

Typ.

Envl.

pp *p* *v.f.* *sffz* *ord. mp* *(pant.)* *ord. mf* *(pant.)* *ord. mf* *plosive, popping* *ord. sffz mf* *p* *poco f*

tr *5:4* *5:4* *5:4* *5:4* *gliss.* *3* *5:4* *5:4* *tr* *5:4* *5:4*

ə r I ŋ d a I n æ m I k b æ t ə r i

3 7 1 3 1 7 3

IX. INDIGO

$\text{♩} = 100$

approx. pitch/inflection
(whispered)

1

85

S. Solo

Typ.

Envl.

p *sfp* *mf* *p* *sfp* *sfp* *sfp* *sfp* *sfz* *ppp*

5:4 5:4 5:4 7:4 5:4 5:4 5:4 5:4 5:4

gliss.

s i s k a I s i s i s i s

5 3 7 1 7 3 7 3 7 1

Comb filter A2
Trem. 80 (50ms sampl)
Lo-pass vari (50ms sampl)
Reverb [65, 65, 65, 127]
Left channel pitch shift up 47 semitones

6

150

S. Solo

Typ.

Envl.

p *mf* *p* *mf* *p* *sfp* *sfp* *sfp* *sfp* *sfz*

8 sec breve 4 8

5:4 5:4 5:4 5:4 5:4 5:4 5:4 5:4 3

gliss.

a I s k a I s i s i s i s i

7 3 7 3 7 3 7 3

X. PATRIARCH

1 $\text{♩} = 100$

sfp tr f

mp

v.f. *ff*

mf tr *mp*

p sfz p (whispered)

S. Solo

Typ.

Envl.

5 7 3

ə r ε s t I ŋ l i d ə r s t r ɔ ŋ s i n j

5:4 7:4 5:4

Comb filter B1
Trem. 20 (600ms sampl)
Band-pass vari (600ms sampl)
Reverb [6, 19, 37, 0]



ord. *mp* tr

breath v.f. ord. *mf* tr

sub p *mf*

(whispered) *p*

ord. *sfp* tr f

S. Solo

Typ.

Envl.

6

ə r ε l d r p e I t ə r

5:4 5:4 5:4 7:4 5:4 5:4 5:4

3

XI. VIVID ORCHARD

1 $\frac{1}{4}$ ♩ = 76 $\frac{4}{4}$ *f*

S. Solo

Typ.

Envl.

l u s ə d g r e I n g l ε r I ŋ

v.f. → ord. *ff* *sempre f*

tr

5:4 5:4 5:4 3 5:4 5:4 3 sec 5:4 5:4

gliss.

7 9 7

Comb filter around F1 + F3
Reverb [118, 127, 112, 127]

molto accel. (♩ = 112) ♩ = 76

5 *f* *ff* - *f* *fff* *mp* $\frac{1}{4}$

S. Solo

Typ.

Envl.

e I k 3 r z b o u l d s o I (l)

plosive, popping

v.f. ord.

5:4 5:4 5:4 5:4 6:4 7:4 5:4 5:4 7:4

gliss.

7 9 7 9

Abruptly fade out sustain for a quicker transition to the final movement

XII. WHITE
approx. 50 sec



Senza misura
slap the side of the typewriter to trigger playback

S. Solo

Typ.

While the pre-recorded sound is playing, intensely study the page currently in the typewriter. The soloist should NOT acknowledge the audience during this movement. This direction should be identical to the first movement (I. White). After the playback ends, calmly take the sheet of paper out of the typewriter while continuing to concentrate on the page's text. Then, again to create a parallel with movement one, abruptly and unceremoniously crumple the page. The expression during this gesture should be of disappointment and contained frustration. Immediately after crumpling the page the soloist should toss or drop the paper ball into the wastebasket then walk off stage to end the piece.

Envl.

pre-recorded material of vocal effects layered from all other prior microludes
cross-fade to whitenoise at the end

March 13, 2015
Stanford, CA

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