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What We See is What We Desire to See for Color and Instruments: Color as an Inspiration for Musical Composition

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UNIVERSITY OF CALIFORNIA  
RIVERSIDE

What We See is What We Desire to See for Color and Instruments:  
Color as an Inspiration for Musical Composition

A Dissertation submitted in partial satisfaction  
of the requirements for the degree of

Doctor of Philosophy

in

Music

by

Christine Meeyong Lee

June 2018

Dissertation Committee:  
Dr. Tim Labor, Chairperson  
Dr. Ian Dicke  
Prof. Matthew Taylor

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2018

The Dissertation of Christine Meeyong Lee is approved:

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Committee Chairperson

University of California, Riverside

## ABSTRACT OF THE DISSERTATION

What We See is What We Desire to See for Color and Instruments:  
Color as an Inspiration for Musical Composition

by

Christine Meeyong Lee

Doctor of Philosophy, Graduate Program in Music  
University of California, Riverside, June 2018  
Dr. Tim Labor, Chairperson

This study investigates the affective relationship between music and visual media including projection, color (staging and lighting) and sound (instrumental and electronic). Concerns about color as it relates to music are thousands of years old.<sup>1</sup> There could be many reasons why humans emotionally connect color with music. Color and sound share similarities in the form of audio and visual spectrum and affect humans' primal reactions. Sound is an ingredient of music in a manner similar to the way color is an ingredient of visual art. Sometimes, in a work designed with music and color together, these elements work toward the same goal. When one element takes a different approach than that suggested by the other, the emotions they evoke are still poetically connected.

As lighting designers manipulate the visual stage by applying different colors,

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<sup>1</sup> Leon Gunther, *The Physics of Music and Sound* (New York: Springer Press, 2012), 7-8. A pipe instrument, Huang Chung, made of bamboo in China under the direction of the Yellow Emperor, Huang Ti (ca. BC 2600) is based on sounds of respective female and male phoenixes. Six notes with distinctive names comprise the pitches of the instrument; the lowest note F is called "yellow bell."

composers manipulate music by applying musical language. Although pop and commercial music frequently incorporate colored light to visualize music, it is rarer to find this in classical music settings.

“What We See is What We Desire to See for Color and Instruments: Color as Inspiration for Musical Composition” includes two parts. One is a new five movement musical composition (ca. 37 minutes) for fourteen performers including eleven musicians, projections, lighting, and electronics (Max for Live and Ableton Live) inspired by the abstract qualities of color. The second is a reflection of the composition concentrating on its inspirational relationship between color and music.

## Table of Contents

<b>Introduction</b> .....	1
<b>Full Score</b> .....	4
<b>Reflection</b> .....	156
<b>I. Color</b>	
A. Human Relationship with Color .....	156
1. Light and Our Perception of Color .....	156
2. Eye as Receptor and Brain as Interpreter .....	157
3. Discerning Color .....	158
a. Relationship between Color and Our Senses .....	159
b. Emotional Responses.....	161
i. Biological .....	162
ii. Cultural.....	162
B. Color Charts .....	168
<b>II. Aesthetics of Color and Music</b>	
A. Color Artists .....	175
B. Color Musicians .....	177
C. Current Application of Color Light for Visual Works .....	184
D. Experimentation with Color in Musical Composition.....	187

### III. Color as an Inspiration

A. Methodology.....	199
1. Concept.....	199
2. Overall Approach .....	200
3. Tools and Setup .....	205
a. Video .....	205
i. Creation .....	205
ii. Projection .....	206
b. Stage Lighting .....	206
c. Electronic Sound.....	206
i. Live Processing .....	206
ii. Pre-recorded Sound .....	207
d. Music .....	207
i. Set-up.....	207
ii. Computer Notation.....	207
B. Stories of Each Movement with Projection, Lighting and Music.....	207
1. Movement I. Universe to Sky.....	208
1-1. Transition Black 1. Dark Clouds.....	214
2. Movement II. Human .....	217
2.1. Transition Black 2. Nightmare/Destruction .....	241



3. Movement III. Industrial .....	243
3.1. Transition Black 3. Stage of Fear .....	251
4. Movement IV. Battle .....	254
4.1. Transition Black 4. Sinking and Black Hole .....	267
5. Movement V. After Battle .....	268
<b>IV. Future Directions .....</b>	<b>275</b>
<b>V. References.....</b>	<b>277</b>
<b>VI. Appendix: Project Samples .....</b>	<b>291</b>

## List of Figures

Figure 1. Table: Color Chart for Red Orange Yellow Green .....	168
Figure 2. Table: Color Chart for Blue Purple Violet and Other Colors .....	171
Figure 3. Table: Color Chart for Black, White and Gray .....	173
Figure 4. Table: Color Chart for Emotional Effects of Instruments.....	174
Figure 5. Table: Main Parameters .....	189
Figure 6. Table: Music to Emotion.....	190
Figure 7. Table: Color to Emotion .....	190
Figure 8. Musical Example: <i>I. Universe to Sky</i> mm. 18-24 .....	211
Figure 9. Table: Parameter Application for Movement <i>I. Universe to Sky</i> .....	212
Figure 10. Musical Example: <i>I. Universe to Sky</i> mm. 40-47 .....	213
Figure 11. Musical Example: <i>Transition Black I. Dark Clouds</i> , mm. 84-90 .....	216
Figure 12. Table: Parameter Application for <i>II. Human</i> .....	220
Figure 13. Musical Example: <i>II. Human</i> , Beginning, mm. 121-130.....	221
Figure 14. Musical Example: <i>II. Human</i> , Short Transition to Daylight, mm. 156-171.....	224
Figure 15. Musical Example: <i>II. Human</i> , Daylight 11:00/noon a, mm. 172-174 .....	226
Figure 16. Musical Example: <i>II. Human</i> , Daylight 11:00/noon b, mm. 192-195 .....	228
Figure 17. Musical Example: <i>II. Human</i> , Daylight 11:00/noon c, mm. 196-197 .....	229
Figure 18. Musical Example: <i>II. Human</i> , 4-6 pm, mm. 203-215 .....	231
Figure 19. Musical Example: <i>II. Human</i> , Before Sunset, mm. 227-230 .....	234

Figure 20. Musical Example: <i>II. Human</i> , Night, mm. 244-252 .....	235
Figure 21. Musical Example: <i>II. Human</i> , Lullaby, mm. 262-269 .....	237
Figure 22. Musical Example: <i>II. Human</i> , Final Section, mm. 287-302 .....	239
Figure 23. Musical Example: <i>Transition Black 2. Nightmare/Destruction</i> , mm. 311-312.....	242
Figure 24. Table: Parameter Application for <i>III. Industrial</i> .....	247
Figure 25. Musical Example: <i>III. Industrial</i> , Morse Code, mm.321-325 .....	248
Figure 26. Musical Example: <i>III. Industrial</i> , Morse Code in Humanistic Electric Melody, mm. 359-362.....	250
Figure 27. Musical Example: <i>Transition Black 3. Stage of Fear</i> , mm. 396-397.....	253
Figure 28. Table: Parameter Application for <i>IV. Battle</i> .....	256
Figure 29. Musical Example: <i>IV. Battle</i> , mm. 401-403.....	257
Figure 30. Musical Example: <i>IV. Battle</i> , mm. 407-414.....	258
Figure 31. Musical Example: <i>IV. Battle</i> , mm. 423-428.....	260
Figure 32. Musical Example: <i>IV. Battle</i> , mm. 500-503.....	262
Figure 33. Musical Example: <i>IV. Battle</i> , mm. 504-507.....	264
Figure 34. Musical Example: <i>IV. Battle</i> , mm. 519-522.....	266
Figure 35. Table: Parameter Application for <i>V. After Battle</i> .....	270
Figure 36. Musical Example: <i>V. After Battle</i> , mm. 582-592 .....	271
Figure 37. Musical Example: <i>V. After Battle</i> , mm. 611-621 .....	273
Figure 38. Programming Example: <i>ArturiaMaster_v2.maxpat</i> .....	291

Figure 39. Programming Example: encoder1.maxpat.....	292
Figure 40. Programming Example: encoder1.maxpat.....	292
Figure 41. Programming Example: Two Way Toggle Mode_v5.maxpat.....	293

## **Introduction**

In the morning, before dawn, the color of the sky and mountains surrounding the freeways of California is nearly black. With the slow emergence of the sun, the color of the same sky and mountains changes pinkish. More sunlight during the day brightens the same freeways, sky, and mountains. They have their own colors, but we associate them with a reflection of sunlight. We think of the freeway as gray, and the mountains as brown or green. The changes of sunlight throughout the day create other shades, colors, and tones warping the original colors of materials.

Changes in light intensity suggest different aural experiences. A person who walks alone on the road under a faint yellow light might ironically feel frightened in the calmest moment even with no noise. When a person drives a car on an isolated freeway at night depending only on the light from the headlights, they might feel more readily agitated by the environment if music from a horror movie comes out of the speaker. When a driver is in the middle of traffic, tranquil music often assuages them. Some radio channels even play classical music to combat road rage during commuting time.

Music corresponds to emotions. Laurence Berman describes how musical languages in different genres connect to depict wide varieties of human emotion. Humanism often explains music in terms of emotions. In terms of the madrigal, French music is described as ‘cold, limp, and passionless’ comparing to Italian music—warm, full-blooded, and alive.<sup>2</sup>

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<sup>2</sup> Laurence D. Berman, *The Musical Image: A Theory of Content* (Westport, CT: Greenwood Press, 1993), 131-136.

Kandinsky saw the connection between music and color through emotional impact and emphasizes the importance of the soul as an artist including the mention of the color's effects. He wrote 'color is the keyboard. The eye is the hammer. The soul is the piano, with its many strings.'<sup>3</sup> For Kandinsky, musical sound is innate to humans. Musical harmony is a 'mingling of color and drawing.' Each exists individually, but they are blended through a common ground of human emotion<sup>4</sup> and corresponding spiritual vibration.<sup>5</sup>

Gunther attempts to connect sound and color with the concept of spectrum, saying:

"While dilute gases of atoms are heated up sufficiently, as they are in a star, we can see electromagnetic radiation which comes directly from the star's atoms. That radiation reflects the behavior of a single atom. ---Because the incoming beam is close to being white light, the spectrum will be a continuous rainbow spectrum.---Spectrum of an atom, which can be compared to the sound spectrum of a musical instrument"<sup>6</sup>

and:

"music and color are subjective manifestations of the corresponding objective physical phenomena—sound and light respectively."<sup>7</sup>

The musical composition *What We See is What We Desire to See for Color and Instruments Color as an Inspiration for Musical Composition* examines the subjective relationship between color and music through the emotional impact of complementation

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<sup>3</sup> Simon Shaw-Miller, *Visible Deeds of Music: Art and Music from Wagner to Cage* (New Haven: Yale University Press, 2002), 71.

<sup>4</sup> Wassily Kandinsky, *Concerning the Spiritual in Art and Painting in particular 1912* (New York: Wittenborn, Schultz, 1947), 66-7.

<sup>5</sup> *Ibid.*, 44-5.

<sup>6</sup> Leon Gunther, *The Physics of Music and Sound* (New York: Springer Press, 2012), 179-180.

<sup>7</sup> *Ibid.*, 11.

and supplementaiton. The instrumentation with electronics works compatibly with the environment created by the projection, video and lighting. Eleven performers play instruments with diverse timbres, registers and dynamics, and include flute/piccolo, Bb clarinet, bassoon, two violins, viola, cello, double bass, two percussionists and piano along with designers for electronics, projection, and lighting.

**SCORE**

**WHAT WE SEE IS  
WHAT WE DESIRE TO SEE**

**FOR COLOR AND INSTRUMENTS:  
COLOR AS AN INSPIRATION  
FOR MUSICAL COMPOSITION**

**(2018)**

**CHRISTINE MEEYONG LEE**



**WHAT WE SEE IS WHAT WE DESIRE TO SEE  
FOR COLOR AND INSTRUMENTS:  
Color as an Inspiration for Musical Composition**

**Instrumentation**

Flute  
Bb Clarinet  
Bassoon

Percussion (two players)

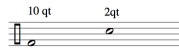
Percussion 1

Vibraphone –soft/hard mallets

Anvil

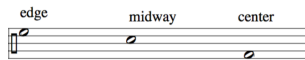
Steel buckets-2 quart, 10 quart

(metal rods with any length, two pairs of small diameters, and large diameters)

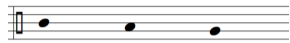


Hi-hat –snare drum sticks

Low tom



Woodblocks (3) (shared)

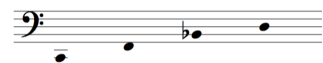


Triangle

Snare

Percussion 2

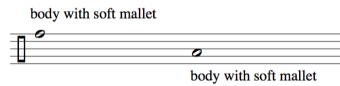
Timpani



Suspended Cymbal

Bass drum (soft mallets, timpani mallets)

Tamtam (timpani mallets, triangle beater, bow)



Piano

Strings

Violin I  
Violin II  
Viola  
Cello  
Contra bass

Electronics

Software:

Sequencing program to record, playback and manipulate sound (distortion, granular and filter delay)

Example:

Max/MSP 7.3.4 (<https://cycling74.com>), Ableton Live Suite 9 and  
Max for live (<https://www.ableton.com/en/live/max-for-live/>)

Hardware:


Audio Interface (minimum 6 inputs for microphones)  
Mixer  
USB Keyboard Controller with assignable knobs and pads  
Microphones (at least 6)  
Cables  
Diffusion System (speakers)  
Video projector (optional: split program to multiple screens, mapping  
program in Max/MSP/Jitter)  
Screen(s)

Duration: ca. 37'

## Notes to the Performers

1. If this piece occurs first or after intermission, there will be 8-15 minute pre-show. House light should be simple and perhaps work lights can be used. Performers enter before the first blackout wearing white shirts or tunics; black pants and shoes; black ties optional. Music is contained in white binders. Stand lights are small with white light. If stand lights are not on a dimmer, performers turn them on shortly before the first blackout (perhaps cued by the entrance of the conductor).

5

2.  timed fermata (in this case 5 seconds)

3. For note heads connected with a straight line, play as glissando to create a continuous portamento between indicated notes over the indicated rhythm. If a glissando is wavy, pitches should be distinct.

4. Clarinet: multi-phonics are intended to sound like disembodied whistle tones which softly blend.

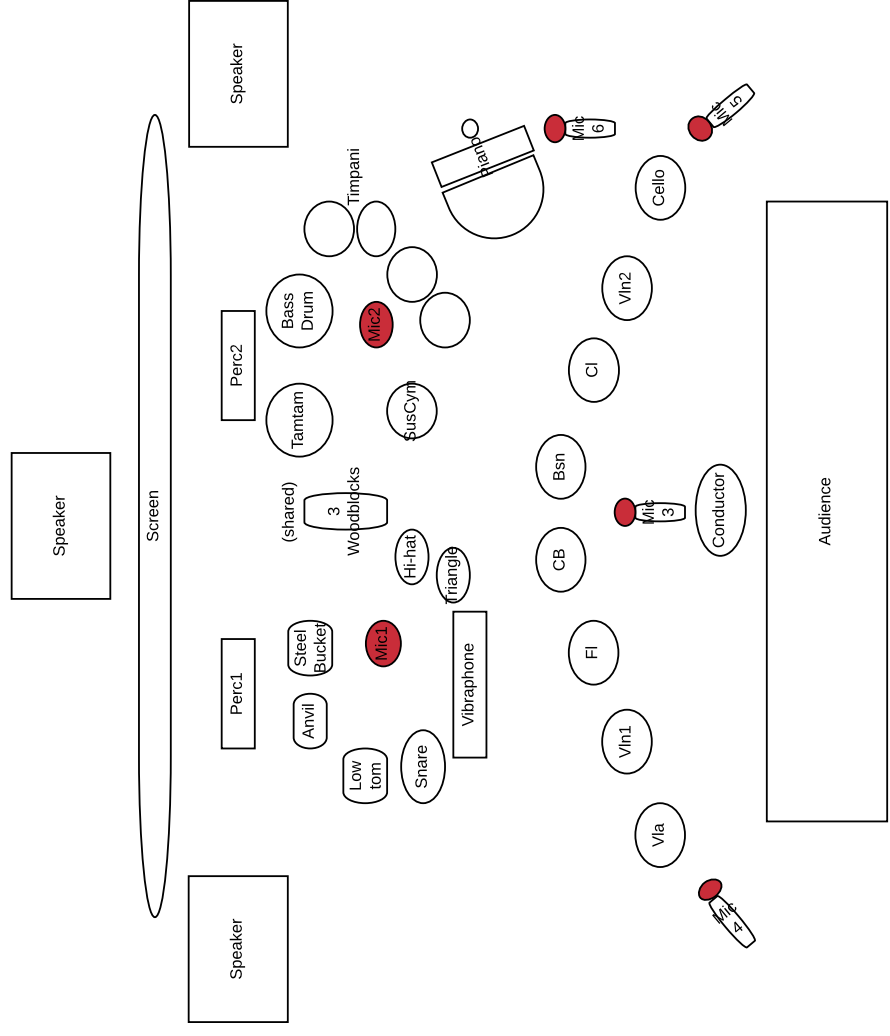
5. When sudden dynamic changes without any slurs or hairpins are indicated, move between the various dynamic levels as quickly as possible.



6. Lighting- Color numbers indicated in *Electronics, Lighting and Projection Design* are approximate.

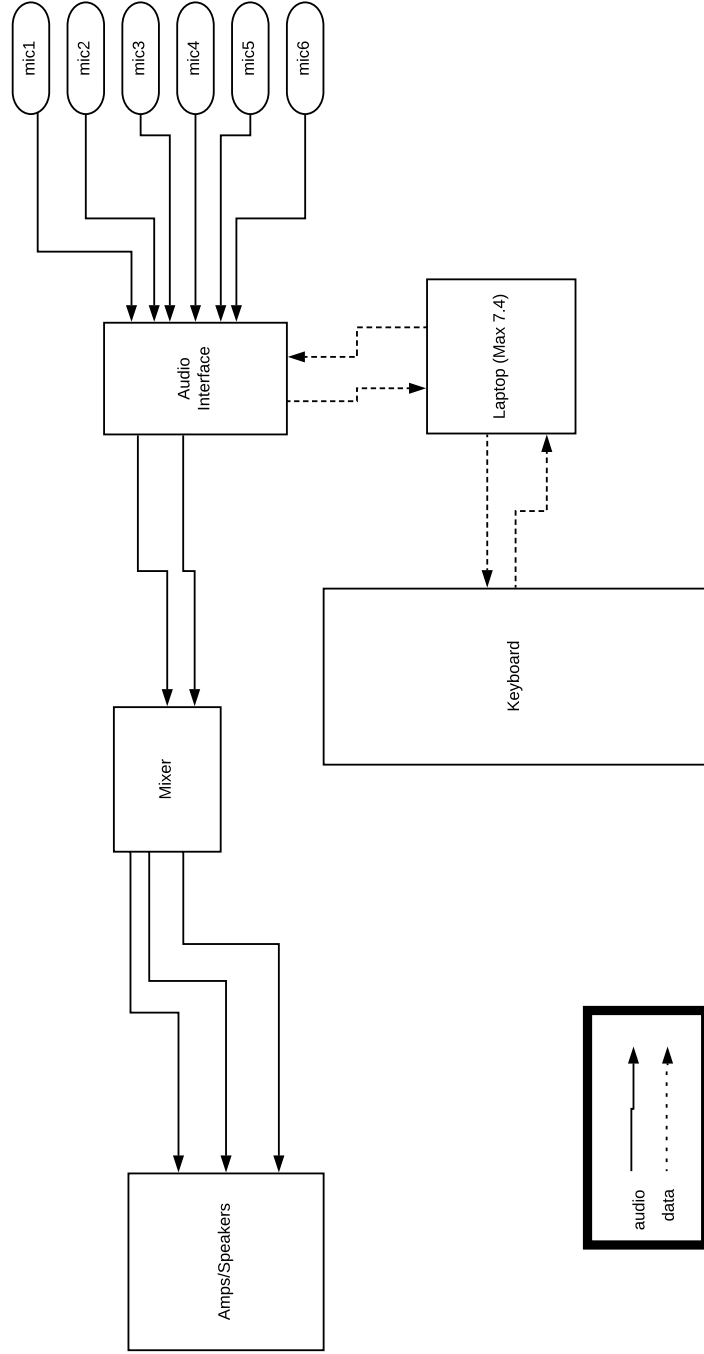
# WHAT WE SEE IS WHAT WE DESIRE TO SEE FOR COLOR AND INSTRUMENTS

Suggested Stage Layout



# WHAT WE SEE IS WHAT WE DESIRE TO SEE FOR COLOR AND INSTRUMENTS

Suggested Sound Connections



## **ELECTRONICS, LIGHTING AND PROJECTION DESIGN**

### **PRESHOW**

0.0 (At least fifteen minutes before the start of the music)

ELECTRONICS: None

LIGHTS: Natural color; house light or work light; blue as tint

PROJECTION: None or neutrally colored projection related to the lights.

### **I. UNIVERSE TO SKY**

1.1 (measures 1 through 12 - (Opening through the start of Rehearsal A))

PRESHOW fades to BLACK

LIGHTS: Up slowly with the start of the piece; “White” (Light Tough Rolux #115) as white and neutral as possible and stage is as in a cotton candy with a fog if it is applicable

PROJECTION: Play the first video *I. Universe to Sky*

Start from an image of white clouds

1.2 (measure 8- 77) Rehearsal A to D

ELECTRONICS: Read notes from the score and play sine wave on the keyboard (sound example: ESM monophonic synth plug-in in Logic Pro X

10.2.0)

1.3 (measure 13 -26) Rehearsal B

LIGHTS: Stays in “White” but add Cool Blue #66 in and out slowly

PROJECTION: Moving surreal lightly tinged white clouds slowly  
emerges and ascends

Clouds surround mountains

1.4 (measure 27-43) Rehearsal C

LIGHTS: Stays in white but gradually add Light Gray #97 as tinted

PROJECTION: Fog slowly interrupts clouds

1.5 (measure 44-83) Rehearsal D

LIGHTS: Stays in white but tinted “Gray” (Light Gray #97) dissolves to  
Medium Gray #98

PROJECTION: Fog drags clouds down while clouds move in different  
directions

**TRANSITION BLACK1. DARK CLOUDS**

B1.1 (measure 84-108) Rehearsal E

ELECTRONICS: Press button 1 to activate distortion and continuously  
change values of amount with knob 1

LIGHTS: Turn out the Medium Gray #98 slowly to make the whole  
performance space dark (murky as possible)

Only performers receive stage light

Lights stay statically

PROJECTION: Dark clouds move slowly along fogs and they go  
downward

B1.2 (measure 109-115) Rehearsal F

LIGHTS: Slowly add purple (Baldassari Blue #381)

PROJECTION: Clouds and fogs become an entity in black

B1.3 (measure 116-120) Rehearsal G

LIGHTS: Slowly add Medium Gray #98 to produce “Black”

“Purple” (universe) which slowly dissolves into red (CalColor 60 Red #4660) as the earth

PROJECTION: Empty but with lighter color than black from the images of cave and rocks in black

## **II. HUMAN**

2.1 (measure 121-132) Rehearsal H (4 am)

LIGHTS: Red (CalColor 60 Red #4660) slowly dissolves into “Magenta1” (CalColor 30 Magenta #4730) as a light for late dawn

PROJECTION: Collage: Blurry, expressionless human faces with no features dissolve one into another

2.2 (measure 133-168) Rehearsal I (6:00 am)

LIGHTS: “Magenta1” (CalColor 20 Magenta #4730) becomes “Magenta2” (CalColor 30 Pink #4830) and “Yellow” (No Color Straw #06) is slightly added as a sunbeam

PROJECTION: Eyes with different expressions are slowly added to human faces

2.3 (measure 169-172) Rehearsal J (transition to daylight)



LIGHTS: “Magenta2” (CalColor 30 Pink #4830) slowly dissolves into “Bright Yellow” (CalColor 90 Yellow #4590) as daylight

PROJECTION: Still mouths are added; eyes are still; noses added; faces with different expressions

2.4 (measure 173-203) Rehearsal K and L (Daylight 11:00 am/noon)

LIGHTS: Only “Bright Yellow” (CalColor 90 Yellow #4590) dissolves into “Pale Yellow” (#07) to have a natural the stage light as daylight

PROJECTION: Sun is in the center, and faces of people are melting around it; add collage layers of stills of body parts (arms and legs) in active positions; gradually add other body parts and individual full bodies; faces merge with bodies, now sometimes in groups, bodies spread around; shapes of humans floating on spaces

2.5 (measure 204-230) Rehearsal M and N (4 pm)

LIGHTS: “Pale Yellow” (#07) becomes “Darker Yellow” (Straw Tint #13 or Medium Straw #14) as with “Brown”

PROJECTION: Numbers in a format of digital time indication moves around slowly

2.6 (measure 231-244) Rehearsal O and P (Sunset)

LIGHTS: Increase saturation on sky; Begin adding “Red 2” (Pale Rose Pink #37) and later “Red 3” (Medium Salmon Pink #32) and alter two reds slowly to create a light effect during the twilight; “Light Blue” (Cool Blue #66) as sunlight in the sky

PROJECTION: A word “DAYDREAM” moves up; figures of people;  
buildings in distance

2.7 (measure 245-258) Rehearsal Q (Night)

LIGHTS: Complete transition to “Purple2” (Light Rose Purple #47) as the  
end of twilight

PROJECTION: Clouds at the night sky;

2.8 (measure 259-270) Rehearsal R (Lullaby)

ELECTRONICS: Record on mic 3, 4, and 5

2.9 (measure 259-288) Rehearsal R (Lullaby)

LIGHTS: “Purple2” (Light Rose Purple #47) dissolves into darker “Purple  
3” (Indigo #59)

PROJECTION: Moon slowly moves and white dots slowly appear on the  
black background as stars

2.9 (measure 289-303) Rehearsal S

LIGHTS: Atmospherically stays in “Purple3” (Indigo #59) and pin light  
on the Projection

PROJECTION: Stars in the sky

**TRANSITION BLACK2. NIGHTMARE/DESTRUCTION**

B2.1 (measure 304-314) Rehearsal T

LIGHTS: “Dark blue” (Green Blue #77); it dissolves to almost “Black”  
nearly blackout to create fearful environment

PROJECTION: Black moon

B2.2 (measure 315-329) Rehearsal U

LIGHTS: Slowly add Indigo #59 and sparsely add golden colors  
(Roscosun 1/8 CTO #3410)

PROJECTION: Nightmare images alternate with black moon

### III. INDUSTRIAL

3.1 (measure 330-342) Rehearsal V

ELECTRONICS: Record on mic 1,3, 5; hit the record button at the  
transition

3.2 (measure 330-375) Rehearsal V to Rehearsal AA

ELECTRONICS: Read notes from the score and play sine wave on the  
keyboard (sound example: ES M monophonic synth plug-in in Logic Pro  
X 10.2.0)

3.3 (measure 330-351) Rehearsal V and Rehearsal W

LIGHTS: Slowly dissolves to “Metallic Gray” (Neutral Gray #398)

PROJECTION: Morse code appears with slowly moving industrial  
materials; walls, irons, pipes

3.4 (measure 352-359) Rehearsal X

LIGHTS: Add “Metallic Blue” (Daylight Blue #65)

PROJECTION: Industrial materials layered

3.5 (measure 360-369) Rehearsal Y (Morse code in a humanistic mode with electric  
melody)

LIGHTS: Slightly beaming “Artificial Lights” (example: Skelton Exotic

Sangria #39, Salmon #41, Middle Rose #44, Lilac #55, Light Salmon Pink #30, etc.) in a slow pace

PROJECTION: Morse codes move concentrically and outwards;

3.6 (measure 370-374) Rehearsal Z (Techno zone)

LIGHTS: “Bright Yellow” (CalColor 30 Yellow #4530), “Bright Pink” (Salmon Pink #31), “Bright Orange” (Light Salmon Pink #30) (Electric beam, or electric brush-like artificial looking colors) all alternates, as bright electric lines

PROJECTION: Blue frames of buildings appear on black background slowly merges into close-up metallic materials (parts of cars, nuts and bolts, wires)

3.7 (measure 375-381) Rehearsal AA

LIGHTS: Blink all possible colors

PROJECTION: Industrially built materials (brick walls, smart phones, TV, laptop, signs in gray color)

3.8 (measure 382) Rehearsal BB (electronics: ca. 1 min 30 sec)

ELECTRONICS: Play pre-recorded sound file Industrial #1

LIGHTS: Dissolves to “Black 2” (Storage Indigo #2008)

PROJECTION: Morse codes with a building image slowly turn into a circle of iron; Morse codes send a message “INDUSTRIAL”

**TRANSITION BLACK3. STAGE OF FEAR**

B3.1 (measure 383-399) Rehearsal CC and Rehearsal DD

ELECTRONICS: Play pre-recorded sound file “Stage of Fear #1”

LIGHTS: Shift to “Black3” nearly blackout and pin light Yellow  
(CalColor 60 #4560) constantly moves

PROJECTION: Texture of caves in darkness

#### **IV. BATTLE**

##### 4.1 (measure 400- 482) Rehearsal EE to Rehearsal II

ELECTRONICS: Play pre-recorded sound files mapped on pads  
(example: Arturia MiniLab Universal MIDI Controller)

LIGHTS: “Black” slowly turns into “Bright Red” (Salmon #41)

PROJECTION: A big circle and a rectangle appear in red; small circles  
and a drawing of people start to appear

##### 4.2 (measure 483-521) Rehearsal JJ and Rehearsal KK

LIGHTS: “Bright Red” (Salmon #41) becomes “Dark Red” (Storaro Red  
#2001) as lines

PROJECTION: Images of people in line drawn as black blur dots slowly

##### 4.3 (measure 522-532) Rehearsal LL

LIGHTS: Red lines disperse from few to bunch “Dark Red” rhythmically  
response to music

PROJECTION: Morse codes appear on the shapes of circles and  
rectangles

##### 4.4 (measure 533-539) Rehearsal MM

LIGHTS: “Dark Red” becomes darker “Dark Red 2” (Roscosun 1/4 CTO

#3409)

PROJECTION: A group of Morse codes appears

#### **TRANSITION BLACK4. BLACKHOLE/SINKING**

B4.1 (measure 540-581) Rehearsal NN

LIGHTS: Add “Darker Purple” (Storaro Indigo #2008); “Dark Red” becomes “Darker” (CalColor 60 Red #4660); dissolves to “BLACK” (blackout) at the end

PROJECTION: The screen only has color red; then slowly adds images of clouds as bodies and wreckage from war, resulting ashes and smoke/smog in a big red circle; everything is sinking to the ground or to – black hole

#### **V. AFTER BATTLE**

5.1 (measure 582-623) Rehearsal OO to Rehearsal QQ

ELECTRONICS: Play the processed sound of the recording from the Lullaby section use any granular tool and filter delay in *pp to p* level (example: Ableton Live Suite 9.7.6 Grain Delay and Filter Delay)

5.2 (measure 582-603) Rehearsal OO

LIGHTS: “Black” slowly lose its saturation and dissolves to transparent white (very cold winter-like color) (CalColor 7.5 Cyan #4307 and Frost #100)

PROJECTION: Piles of bodies and wreckage slowly turns into a hill covered by transparent crystal glasses. One red streak slowly crosses the frame.

5.3 (measure 604- 623) Rehearsal PP and QQ

LIGHTS: Light Blue (CalColor 7.5 Cyan #4307) slowly dissolves to “Light Blue 3” (CalColor 15 Cyan #4314 to “Light Green” (Tough 1/8 Plusgreen) then again to “Forest Green” (CalColor 60 Green #4460) to Darker Green (Storaro Green #2004)

PROJECTION: A hill becomes a grassy hill. Red streak slowly disappears; the hill slowly turns to green (same hue as the lights).

Slow zoom-in on a tree

**VI. END**

LIGHTS: dissolves to “Black” (turn off the lights)

PROJECTION: Fade out

**VII. POSTSHOW**

LIGHTS: same as PRESHOW

PROJECTION: same as PRESHOW

# WHAT WE SEE IS WHAT WE DESIRE TO SEE

## FOR COLOR AND INSTRUMENTS

Score

CHRISTINE MEEYONG LEE

Preshow: 8-15 minutes  
before the show starts  
\*See Notes to the Performers

Preshow  
fades to  
"BLACK"  
before the  
piece starts

**A** [I. UNIVERSE TO SKY]

$\text{♩} = 40$

Flute

Clarinet in B $\flat$

Bassoon

Percussion 1

Percussion 2

Electronics

Lights

Projections

Piano

Violin I

Violin II

Viola

Cello

Contra Bass

**(LI)** slowly with the start of the piece - "White" (Light Tough Rolux #115)  
White  
Surreal stage- as inside a cotton candy

**(PI)** Lights up  
lightly tinged white  
clouds or fog

white foggy clouds  
play projection video Universe to the Sky to Dark Clouds

*pp*

*pp*

*ppp*

*ppp*

*ppp*

*ppp*

*ppp*

*ppp*



WHAT WE SEE IS WHAT WE DESIRE TO SEE

Fl. *airtone* *ord.*  
B♭ Cl. *n.*  
Bsn. *n.*  
Perc. 1  
Perc. 2  
Elec. *play* *(E1)*  
*sine wave on keyboard*  
Lights  
Proj  
Pno.  
Vln. I *p* *pp*  
Vln. II *pp* *p* *pp*  
Vla. *pp* *p* *pp*  
Vc. *sempre ppp*  
C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**B**

Fl. *pp*

B♭ Cl. *pp*

Bsn.

Perc. 1

Perc. 2

Elec

Lights (L2) Change saturation in white add Cool Blue #66 in and out slowly

Proj

Pno.

Vln. I *ppp*

Vln. II *pp* *ppp*

Vla.

Vc.

C.B.

The score is divided into two systems. The first system includes Flute, B♭ Clarinet, Bassoon, Percussion 1 and 2, Electronics, Lights, Projection, and Piano. The second system includes Violin I, Violin II, Viola, Violoncello, and Contrabass. The music is in 4/4 time and features various dynamics such as *pp* and *ppp*. A box labeled 'B' is placed above the first measure of the Flute and B♭ Clarinet staves. A circled 'L2' is placed above the Lights staff, with the instruction 'Change saturation in white add Cool Blue #66 in and out slowly'. The score includes various musical notations such as slurs, accents, and dynamic markings.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". The score is arranged in a standard orchestral format with multiple staves for different instruments. The piece begins at measure 18. The time signature changes from 4/4 to 5/4, then to 4/4, and finally to 3/4. The instruments and their parts are as follows:

- Fl.** (Flute): Melodic line with slurs and dynamics.
- B♭ Cl.** (Bass Clarinet): Melodic line with dynamics including *pp*.
- Bsn.** (Bassoon): Rested throughout the section.
- Perc. 1** and **Perc. 2**: Rested throughout the section.
- Elec.** (Electric Piano): Accompaniment with dynamics *pp* and *p*, and markings for *8va*.
- Lights** and **Proj.**: Indicate lighting and projection changes corresponding to the time signature changes (5/4, 4/4, 3/4).
- Pno.** (Piano): Rested throughout the section.
- Vln. I** and **Vln. II** (Violins): Melodic lines with dynamics *pp* and *p*.
- Vla.** (Viola): Melodic line with dynamics *p* and *pp*.
- Vc.** (Violoncello): Melodic line with dynamics *p*.
- C.B.** (Cello/Bass): Rested throughout the section.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**C**

25

Fl. *n.* *pp* *p* *mf* *n.* *pp* *p*

B♭ Cl. *n.* *pp* *p* *mf* *n.* *pp* *p*

Bsn.

Perc. 1

Perc. 2

Elec. *n.* *8va* slowly move pitchbend up/down *8va* *8va*

Lights  $\frac{4}{4}$  (L3) Stays in white but gradually add Light Gray #97 as tinted

Proj  $\frac{4}{4}$  a bit forward motion  
clouds move towards the earth

Pno.

**C**

25

Vln. I *pp* *p > pp* *n.*

Vln. II

Vla. *p* *pp* *pp* *n.* *p*

Vc. *pp*

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

33

Fl. *pp* *p* *p*

B♭ Cl. *pp* *n.* *pp* *p*

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I *pp* *p*

Vln. II *p* *pp*

Vla.

Vc.

C.B.

Detailed description: This page of a musical score, numbered 33, is for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. It features a variety of instruments. The Flute (Fl.) part begins with a *pp* dynamic, followed by a *p* dynamic, and then a *p* dynamic. The B♭ Clarinet (B♭ Cl.) part starts with a *pp* dynamic, includes a *n.* (noisy) marking, and then has *pp* and *p* dynamics. The Bassoon (Bsn.) part is mostly silent. Percussion (Perc. 1 and 2) is also silent. The Electric Bass (Elec) part has a series of notes with a *pp* dynamic. The Lights and Projection (Proj) parts are silent. The Piano (Pno.) part is silent. The Violin I (Vln. I) part starts with a *pp* dynamic, followed by a *p* dynamic. The Violin II (Vln. II) part starts with a *p* dynamic, followed by a *pp* dynamic. The Viola (Vla.) part has a series of notes with a *p* dynamic. The Violoncello (Vc.) part has a series of notes with a *p* dynamic. The Contrabass (C.B.) part is silent.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**D** ♩ = 80

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

**D**

**G12**

**L4** Stays in white but tinted "Gray" (Light Gray #97) dissolves to Medium Gray #98

clouds on earth

*pp*

*p*

*pp*

*p*

*pp*

*p*

*pp*

*p*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

48

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*p*

*pp*

*p*

*mf*

n.

*p*

*mf*

*p*

*pp*

*p*

*mp*

*pp*

*p*

*mp*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score page, numbered 28, covers measures 57 through 64. It features a variety of instruments and parts:

- Flute (Fl.):** Measures 57-64. Dynamics range from *p* to *mf*. Includes slurs and accents.
- B♭ Clarinet (B♭ Cl.):** Measures 57-64. Dynamics range from *mf* to *mp*. Includes slurs and accents.
- Bassoon (Bsn.):** Measures 57-64. Rested.
- Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2):** Measures 57-64. Rested.
- Electric (Elec.):** Measures 57-64. Features a melodic line with slurs and accents.
- Lights:** Measures 57-64. Rested.
- Projection (Proj.):** Measures 57-64. Rested.
- Piano (Pno.):** Measures 57-64. Rested.
- Violin I (Vln. I):** Measures 57-64. Dynamics range from *mf* to *p*. Includes slurs and accents.
- Violin II (Vln. II):** Measures 57-64. Dynamics range from *p* to *mf*. Includes slurs and accents.
- Viola (Vla.):** Measures 57-64. Dynamics range from *p* to *mf*. Includes slurs and accents.
- Violoncello (Vc.):** Measures 57-64. Dynamics range from *p* to *mf*. Includes slurs and accents.
- Double Bass (C.B.):** Measures 57-64. Rested.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

65

Fl. *p* *pp*

B♭ Cl. *p* *pp*

Bsn.

Perc. 1

Perc. 2

Elec. (8va) *pp*

Lights

Proj

Pno.

Vln. I *pp*

Vln. II *pp*

Vla. *pp* *p*

Vc. *pp* *p*

C.B.

Detailed description: This page of a musical score, numbered 65, is for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. It features a variety of instruments. The Flute (Fl.) and B♭ Clarinet (B♭ Cl.) parts are prominent, both starting with a piano (*p*) dynamic and moving to pianissimo (*pp*) later in the section. The Flute part includes a trill marked 'R' and a sharp sign. The B♭ Clarinet part has a similar trill marked 'G#'. The Bassoon (Bsn.) part is mostly silent. Percussion (Perc. 1 and 2) and Piano (Pno.) parts are also silent. The Electric Guitar (Elec.) part features a sustained, arpeggiated texture in the 8th octave, marked *pp*. The string section (Violin I, Violin II, Viola, Violoncello, and Contrabass) plays a sustained, arpeggiated texture. The Violin I and II parts are marked *pp*, while the Viola, Violoncello, and Contrabass parts are marked *p*. The Lights and Projection parts are also silent.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It is a multi-staff score for a large ensemble. The score is divided into two systems. The first system includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec.), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The second system includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec.), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score is written in 2/4 and 4/4 time signatures. Dynamics include *p*, *mf*, and *mp*. The score includes various musical notations such as slurs, accents, and dynamic markings.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**E** [TRANSITION BLACK1. DARK CLOUDS]

Fl. *non espress.*  
*p*

B♭ Cl. *airtone non espress.*  
*p* ord.

Bsn. *non espress.*  
n. *ff p* *pp p*

Perc. 1

Perc. 2

84 **E**

84 Elec **E2** **Process 1-distortion**  
take piano sound from mic 6

84 Lights **L5** Only performers receive stage light  
(murky as possible)  
LIGHTS SHIFT TO BLACK

84 Proj dark clouds  
fluffy vision

Pno. *p*  
*pp*

84 **E**

Vln. I

Vln. II

Vla. *pp mp pp pp*

Vc. *mp p mp pp*

C.B. *p pp mp p mf p mf pp mp*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

91

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mp pp p pp p > n.*

soft mallets  
bass drum

*pp < p >*

*mp mf pp p mf pp mf p pp < mp pp mf pp p*

Detailed description: This page of a musical score, numbered 91, features a variety of instruments. The Flute (Fl.) part has a melodic line with dynamic markings *mp*, *pp*, *p*, *pp*, *p*, and a fermata. The Bassoon (Bsn.) part has a bass line with a fermata. Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2) are marked with 'soft mallets bass drum' and dynamic markings *pp* and *p*. The Piano (Pno.) part features a complex texture with chords and arpeggios. The Viola (Vla.) part has a rhythmic pattern. The Violoncello (Vc.) part has a melodic line with dynamic markings *mp*, *pp*, *mf*, *p*, *pp*, and a fermata. The Contrabass (C.B.) part has a bass line with dynamic markings *p*, *mf*, *pp*, *p*, *mf*, *pp*, *mf*, *pp*, *p*. Other instruments like Flute II, Clarinet, Saxophone, Electric, Lights, Projection, Violin I, Violin II, and Viola are present but have no notation on this page.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

97

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mp pp p pp p* *n.*

*pp pp < p pp pp < p pp pp*

*mf pp mp pp p mf p mp < mf pp mp p mp mf pp*

Con sord. sul pont.

*pp* Con sord. sul pont.

*pp* Con sord. sul pont.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

108 **F**

Fl. *mp* *p* *mp* *pp* *p mp* *pp mp > p*

B♭ Cl. *mf* *pp p mp* n.

Bsn. *mp* *p* *mp* n.

Perc. 1

Perc. 2 *< p > pp*

Elec

Lights (L6) slowly add "PURPLE" (Baldassari Blue #381)

Proj

Pno.

Vln. I *p < mp* *pp* *non. vib.* n.

Vln. II *p* n.

Vla.

Vc. *mf* *pp* *p* *non. vib.*

C.B. *p mf* *p mf* *mp* *pp* *mf* *mp* *p* *pp < mf* *p mp p*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

114 **G**

Fl. *pp* n. *pp* n.

B♭ Cl. *pp* n. *pp* n.

Bsn. *pp* n. *pp* n.

Perc. 1

Perc. 2

Elec  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{4}{4}$

Lights  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{4}{4}$  (L7) slowly add Medium grey #98 to produce "BLACK"  
"PURPLE"(universe) which slowly dissolves into "RED" (CalColor 60 Red #4660) as the earth

Proj  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{4}{4}$

Pno. *ppp*

Vln. I *pp* n. *pp* n.

Vln. II *pp* n. *pp* n.

Vla. Senza sord. *pp* n. *pp* n.

Vc. *pp* n. *pp* n.

C.B. *mf* *pp* n. *p* *mp* *pp* *p* *pp* n.

Detailed description of the musical score: This is a page of a musical score for a symphony or concert band. The title is 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is for measures 114 through 117. A rehearsal mark 'G' is placed above measure 114. The instruments listed are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The Flute, B♭ Clarinet, Bassoon, Violin I, Violin II, Viola, and Violoncello parts feature a melodic line starting in measure 114, marked *pp* (pianissimo) and *n.* (no breath mark). The Piano part features a complex accompaniment with a *ppp* (pianississimo) dynamic. The Percussion parts are mostly silent. The Electric part shows time signatures of 3/4, 2/4, and 4/4. The Lights part includes a circled 'L7' and a descriptive note: 'slowly add Medium grey #98 to produce "BLACK" "PURPLE"(universe) which slowly dissolves into "RED" (CalColor 60 Red #4660) as the earth'. The Projection part also shows time signatures of 3/4, 2/4, and 4/4. The Contrabass part has a dynamic range from *mf* (mezzo-forte) to *pp* (pianissimo) and *p* (piano). The score includes various musical notations such as slurs, accents, and dynamic markings.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

**H [II. HUMAN]**  
=66 (4 am)

Fl. *pp* n. *pp* *p*

B♭ Cl. *pp* n. *pp* *p*

Bsn. *pp* *p*

Perc. 1

Perc. 2 Timp *ppp* *p* *ppp* *ppp*

Elec

Lights <sup>121</sup> (L8) Stage of Dawn-Magenta  
- "Red" (CalColor 60 Red #4660) slowly dissolves into "Magenta1" (CalColor 30 Magenta #4730) as a light for late dawn

Proj <sup>121</sup> (play) video II. Human

Pno.

Vln. I

Vln. II *p* *pp*

Vla. *p* *pp*

Vc.

C.B. *f* *p*

The score is for a section titled 'II. HUMAN' starting at measure 66. It includes parts for Flute, B♭ Clarinet, Bassoon, Percussion 1 and 2 (with Timp), Electric, Lights, Projection, Piano, Violin I and II, Viola, Violoncello, and Contrabass. The score contains various dynamic markings such as *pp*, *p*, *ppp*, and *f*, along with performance instructions like 'Stage of Dawn-Magenta' and 'video II. Human'.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

131 I (6am)

Fl. *pp*

Bs. Cl. *pp*

Bsn.

Perc. 1 *pp* motor on  
vibe soft mallet  
or brushes

Perc. 2 *p*  $\rightrightarrows$  *ppp* *pp* *pp*

Elec  $\frac{2}{4}$   $\frac{5}{4}$   $\frac{4}{4}$

Lights  $\frac{2}{4}$   $\frac{5}{4}$  L9 "Magenta1" (CalColor 20 Magenta #4730) becomes  
"Magenta2" (CalColor 30 Pink #4830) and "Yellow"  
(No Color Straw #06) is slightly added as a sunbeam

Proj  $\frac{2}{4}$   $\frac{5}{4}$   $\frac{4}{4}$

Pno.

I

Vln. I *p*  $\leftarrow$  *mp* *pp*

Vln. II *pp* *p* *pp*  $\leftarrow$  *mp* *p*  $\leftarrow$  *mp*

Vla. *pp*  $\leftarrow$  *mp*

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

139

Fl.

B♭ Cl.

Bsn. *p* *flz.* *pp < p*

Perc. 1 *p* *pp* *pp*

Perc. 2 *pp*

Elec

Lights

Proj

Pno.

Vln. I *p < mp* *p* *mp*

Vln. II

Vla. *ppp* *mp* *pp* *p*

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

148

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

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

WHAT WE SEE IS WHAT WE DESIRE TO SEE

156

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

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

*mp* *mf* *p*

*p* *>* *mf*

*mf* *f*

*mf*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**J** (transition to daylight)

167

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

167

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

167

Elec

5/4

167

Lights

**L10** "Magenta2" (CalColor 30 Pink #4830) slowly dissolves into "Bright Yellow" (CalColor 90 Yellow #4590) as daylight

5/4

167

Proj

5/4

167

Pno.

5/4

**J**

167

Vln. I

*f*

Vln. II

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

Vla.

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

Vc.

*f* *pp* *p* *pp* *n.*

C.B.

*mf*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**K** (daylight 11:00am/noon)

172  $\text{♩} = 60$

Fl. *mp*

B♭ Cl. *mp*

Bsn.

Perc. 1 *mf*  $\text{pp}$

Perc. 2

Elec  $\frac{4}{4}$

Lights  $\frac{4}{4}$  **L11** only "Bright Yellow" (CalColor 90 Yellow #4590) dissolves into "Pale Yellow" (#07) to have a natural stage light as daylight

Proj  $\frac{4}{4}$

Pno.

Vln. I *molto vib.* *p* *pizz.*

Vln. II *p* *pizz.*

Vla. *p*  $\text{mf}$

Vc. *p* *pp*  $\text{mf}$

C.B. *sfz* *f* *ff*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for measures 175-177. The score includes parts for Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.).

Measures 175-177 are marked with a dynamic of *mf*. The woodwinds (Fl., B♭ Cl., Bsn.) play a rhythmic pattern of eighth notes. The strings (Vln. I, Vln. II, Vla., Vc., C.B.) play a melodic line with dynamics ranging from *p* to *f*. The Percussion parts (Perc. 1, Perc. 2) are marked with a dynamic of *f*.

Performance instructions include "to pont." and "to ord." for the Viola part.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

178

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

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

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

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

*p* *f*

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



WHAT WE SEE IS WHAT WE DESIRE TO SEE

183

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*f*

*mf*

*mp*

*mf*

*pizz.*

*mf*

*mf*

*mf*

*n.*

*p*

*mp*

*mf*

*n.*

*mf*

*mp*

*mf*

*arco.*

*p*

*f*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

186

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mf*

*f*

*mf*

*p*

*f*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

189

Fl. *p*

B♭ Cl. *p*

Bsn. *mp* *p*

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno. *mp*

Vln. I *mp* *arco.* *molto vib.* *p*

Vln. II *mp*

Vla. *mp*

Vc. *p*

C.B.

Detailed description: This page of a musical score covers measures 189, 190, and 191. The score is arranged in a standard orchestral format with multiple staves. The Flute (Fl.) and Clarinet in B-flat (B♭ Cl.) parts feature rapid sixteenth-note passages starting at measure 189, both marked *p*. The Bassoon (Bsn.) part begins with a *mp* dynamic and a crescendo leading to *p*. Percussion 1 (Perc. 1) is silent, while Percussion 2 (Perc. 2) plays a rhythmic pattern. The Electric (Elec), Lights, and Projection (Proj) staves are empty. The Piano (Pno.) part has a *mp* dynamic and features a complex rhythmic accompaniment. The Violin I (Vln. I) part starts with *mp*, then plays *arco.* with *molto vib.* in measure 190, and ends with *p* in measure 191. The Violin II (Vln. II) part is marked *mp*. The Viola (Vla.) part is marked *mp*. The Violoncello (Vc.) part is marked *p*. The Contrabass (C.B.) part is silent.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

**L**

Fl. *mf*

B♭ Cl. *mf*

Bsn. *mf*

Perc. 1

Perc. 2

Elec. *mf*

Lights *mf*

Proj. *mf*

Pno. *mf*

Vln. I *f*

Vln. II *f*

Vla. *f*

Vc. *f*

C.B. *mf*

vibe with senza pedal  
hard mallet  
*f*

Detailed description: This page of a musical score, labeled 'L', contains the following parts: Flute (Fl.) with a *mf* dynamic; B♭ Clarinet (B♭ Cl.) with a *mf* dynamic; Bassoon (Bsn.) with a *mf* dynamic; Percussion 1 (Perc. 1) with a *f* dynamic, featuring a vibraphone part with the instruction 'vibe with senza pedal hard mallet'; Percussion 2 (Perc. 2); Electric guitar (Elec.) with a *mf* dynamic; Lights and Projection (Lights, Proj.) with a *mf* dynamic; Piano (Pno.) with a *mf* dynamic; Violin I (Vln. I) with a *f* dynamic; Violin II (Vln. II) with a *f* dynamic; Viola (Vla.) with a *f* dynamic; Violoncello (Vc.) with a *f* dynamic; and Contrabass (C.B.) with a *mf* dynamic. A rehearsal mark '196' is present at the beginning of the Perc. 1, Elec., Lights, Proj., and Pno. staves.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

198

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*p* *mf*

*p* *mf*

*p* *mf*

*p* *mf*

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

susp cymb.

wood blocks

*p* *mf*

*p* *mf*

*p* *mf*

*p* *mf*

*p* *mf*

*p* *mf*



WHAT WE SEE IS WHAT WE DESIRE TO SEE

200

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*pp*

*pp*

Detailed description: This is a page of a musical score for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged in a multi-staff format. At the top, the title 'WHAT WE SEE IS WHAT WE DESIRE TO SEE' is centered. The page number '200' is written at the beginning of the first staff. The instruments listed on the left are: Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The Flute and B♭ Clarinet parts feature rapid sixteenth-note passages with accents. The Bassoon part has a rhythmic pattern of eighth notes. Percussion 1 plays chords with accents, while Percussion 2 has a steady eighth-note pattern. The Piano part consists of chords with accents in the right hand and a rhythmic accompaniment in the left hand. The Violin I part has a melodic line with accents, while Violin II has a more static part. The Viola and Violoncello parts have a rhythmic accompaniment, with the Viola part marked *pp* (pianissimo) in the later measures. The Contrabass part also has a rhythmic accompaniment, also marked *pp* in the later measures. The score is written in a common time signature and includes various musical notations such as accents, slurs, and dynamic markings.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**M** (4pm)

203

Fl. *n.* *p* < *f* > *p* <sup>5</sup> *pp* <sup>3</sup>

B♭ Cl. *n.* *p* < *f* >

Bsn. *n.*

Perc. 1 *pp* low tom on the edge *mp*

Perc. 2 *pp* Timp *p non espress.*

Elec

Lights **(L12)** "Pale Yellow" (#07) becomes "Darker Yellow" (Straw Tint #13 or Medium Straw #14) as with "Brown"

Proj time image

Pno. *pp*

**M**

Vln. I *mp* *pp* *p* *non espress.* pizz.

Vln. II *mf* *f* *p* *non espress.* pizz.

Vla. *n.* *p* *pp*

Vc. *n.* pizz. *p non espress.*

C.B. *n.* pizz. *p non espress.*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

210

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*p* < *f* > *p* *pp* *pp* *p* < *mp* *f p*

*mp* *p*<sup>3</sup> *mf* *p* *mf* *p* *p*<sup>3</sup> *mf* *p*

*mp* *p* *mp* *pp*

*mp* *p* *mp* *pp*

*pizz.*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

216

Fl. *pp* *p* *mp* *fp* *pp*

B♭ Cl. *p* *f* *p* *pp* *p* *mp*

Bsn.

Perc. 1 *mf* *p* *pp* *mf* *p* *mf* *p*

Perc. 2

Elec. 3/4 4/4

Lights 3/4 4/4

Proj. 3/4 4/4

Pno.

Vln. I *p* *arco.* *fp* *pp* *p*

Vln. II

Vla.

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

222

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

N

*p*

*fp*

*pp*

*p*

vibe medium mallets

woodblocks

*p*

*pp*

*mf*

*mp*

*p*

*pp*

*fp*

*pp*

*p*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

227

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

**O**

*f* *mp* *mp* *pp* *pp*

*p* *fp* *mp* *pp*

*pp* *pp*

*pp* *pp*

*mp* *mp* *pp* *pp*

*mp* *arco* *mp* *arco* *p*

*pp* *mp* *pp* *p*

*pp*

**L13**

Increase saturation on sky;  
Begin adding "Red 2" (Pale Rose Pink #37)

*subtle*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

232

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mp* *pp* *ppp* *mp* *p* *mf* *mp* *mf*

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

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

*pp* *mf*

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

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

*poco. cresc.* *mp* *mf*

*poco. cresc.* *mp* *mf*

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

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

Begin adding "Red 2" (Pale Rose Pink #37)  
later "Red 3" (Medium Salmon Pink #32)  
alter two reds slowly to create a light effect during the twilight

L14

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

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

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

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

WHAT WE SEE IS WHAT WE DESIRE TO SEE

237

Fl. *mp* *f* *mf* *ff* *pp* (sunset)

B♭ Cl. *mp* *f* *mf* *ff* *pp*

Bsn. *mp* *f* *mf* *submp* *ff* *pp*

Perc. 1 *mp* *ff* *pp*

Perc. 2 *ff*

Elec

Lights

Proj

Pno. *f* *pp*

Vln. I *f* *ff* *p* (sunset)

Vln. II *f* *ff* *pp*

Vla. *f* *ff* *pp*

Vc. *f* *ff* *pp*

C.B. *f* *ff* arco.

(L15) "Light Blue" (Cool Blue #66) as sunlight in the sky



WHAT WE SEE IS WHAT WE DESIRE TO SEE

241

Fl. *mp*

B♭ Cl. *mp*

Bsn. *mp*

Perc. 1 *mp* **Q** *p* < motor on motor off

Perc. 2

Elec

Lights **L16**  
Complete transition to  
"Purple2" (Light Rose Purple #47)  
as the end of twilight

Proj night with lights

Pno.

Vln. I *mp* **Q**

Vln. II *mp*

Vla. *mp*

Vc. *mp*

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

246

Fl. *blow*  
*p* < > n.

B♭ Cl.  
*pp* < *p* > n.

Bsn.  
*mp* < > n. *p*

Perc. 1

Perc. 2  
Timp  
*p*

Elec  
5/4 4/4 3/4

Lights  
5/4 4/4 3/4

Proj  
5/4 4/4 3/4

Pno.

Vln. I  
*pp* > n.

Vln. II

Vla.

Vc.

C.B.  
*p*

Detailed description: This page of a musical score, numbered 246, features the title 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged for a large ensemble. The woodwind section includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.). The percussion section consists of Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2), with a specific instruction for 'Timp' (timpani) in Perc. 2. The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The Flute part has a 'blow' instruction and dynamic markings *p* and *n.*. The B♭ Clarinet part has dynamic markings *pp* and *p* leading to *n.*. The Bassoon part has dynamic markings *mp* and *p* leading to *n.*. Percussion 2 has a *p* dynamic marking for the timpani part. The string parts include dynamic markings *pp* and *p*. The score is divided into three measures with time signatures of 5/4, 4/4, and 3/4. The page number '246' is written at the top left of the score.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

256 **R** (lullaby)

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec **E3 record** mic 3, 4, 5

Lights **L17** "Purple2" (Light Rose Purple #47) dissolves into darker "Purple 3" (Indigo #59)

Proj

Pno. *pp*

**R**

Vln. I *pp* *p* *pp* *p*

Vln. II *pp* *p* *pp* *p*

Vla. n.

Vc.

C.B. *p*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This page of a musical score, numbered 64, features the title "WHAT WE SEE IS WHAT WE DESIRE TO SEE". The score is arranged in a multi-staff format, with measures 265 through 270. The instruments included are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec.), Lights, Projection (Proj.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The time signature is 6/4. The Flute part has a dynamic marking of *p*. The B♭ Clarinet part has dynamics of *p*, *mf*, and *n.*, with a triplet of eighth notes and a crescendo. The Electric part includes a circled "stop" instruction. The Piano part shows a complex chordal texture. The Violin I and II parts have dynamics of *mp*, *pp*, and *mf*. The Viola part has dynamics of *p* and *pp*. The Violoncello and Contrabass parts have a dynamic of *mf* and *n.*.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

272

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mf*

*pp*

*p*

3

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE", starting at measure 279. The score includes parts for Flute (Fl.), Bass Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The time signature is 3/4.

**Fl.:** Starts with a rest, then plays a melodic line starting in measure 281 with a *p* dynamic. It reaches *mf* by measure 283 and features a triplet of eighth notes in measure 284.

**B♭ Cl.:** Remains silent until measure 281, then enters with a melodic line at *mf*.

**Bsn.:** Starts with a rest, then plays a melodic line starting in measure 281 with a *p* dynamic. It reaches *mf* by measure 283 and includes a note marked with an 'n' in measure 284.

**Perc. 1 & Perc. 2:** Both parts are silent throughout this section.

**Elec:** Silent throughout.

**Lights & Proj:** Silent throughout.

**Pno.:** Provides harmonic support with chords and arpeggiated textures. Dynamics range from *mp* to *mf*.

**Vln. I & Vln. II:** Play melodic lines with dynamics ranging from *mp* to *mf*.

**Vla.:** Plays a melodic line with dynamics ranging from *p* to *pp*.

**Vc. & C.B.:** Both parts are mostly silent, with some low-frequency accompaniment at the end of the section.

**Dynamic markings:** *p*, *mf*, *mp*, *pp*.

**Other markings:** *n.*, triplet (3).

WHAT WE SEE IS WHAT WE DESIRE TO SEE

287 **S**

Fl. *p* *p*

B♭ Cl. *n.* *p* *mf*

Bsn. *mf*

Perc. 1

Perc. 2

Elec.  $\frac{4}{4}$

Lights **(L18)** atmospherically stays in "Purple3" (Indigo #59) pin light on the Projection  $\frac{4}{4}$

Proj.  $\frac{4}{4}$

Pno.

Vln. I *p* *mf* *mf*

Vln. II *p* *p*

Vla. *p* *pp*

Vc. *mf* *p*

C.B. *mf* *p* *mf* *p*





WHAT WE SEE IS WHAT WE DESIRE TO SEE

**T** [TRANSITION BLACK2. NIGHTMARE/DESTRUCTION]

303 *ff*

Fl.

B♭ Cl.

Bsn.

slowly

*f*

303 **T** 10 qt steel bucket with large metal rod

Perc. 1 *ff*

Bass drum with timpani mallets

Perc. 2 *ff*

303

Elec

303 **L19**

Lights "Dark blue" (Green Blue #77); it dissolves to almost "Black" nearly blackout to create fearful environment

303

Proj

303

Pno. *ff*

low 3 notes in random

(cluster lower than right hand)

**T**

303

Vln. I

Vln. II

Vla. *p* end solo

Vc.

C.B. pont *ff*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is arranged in a vertical stack of staves, each labeled with an instrument or effect. The score begins at measure 306. The Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.) parts are mostly silent, with the Bassoon playing a melodic line in the first measure. The Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2) parts feature rhythmic patterns, with Perc. 2 playing a sequence of notes and rests. The Electric (Elec) and Lights parts are silent. The Projection (Proj) part is silent. The Piano (Pno.) part features a complex, dense texture of chords and arpeggios, marked with a forte (*ff*) dynamic. The Violin I (Vln. I) and Violin II (Vln. II) parts are silent. The Viola (Vla.) part is silent. The Violoncello (Vc.) part is silent. The Contrabass (C.B.) part plays a melodic line in the first measure. The score is marked with a forte (*ff*) dynamic and includes various musical notations such as slurs, accents, and dynamic markings.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

308

Fl.

B♭ Cl.

Bsn.

Perc. 1

10 qt steel bucket with large metal rod

*ff*

Perc. 2

*ff*

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

pont

*ff*

Vla.

Vc.

C.B.

*fff*

Detailed description: This page of a musical score, numbered 308, features a variety of instruments. The woodwind section includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.), all of which are silent in this section. The percussion section consists of two parts: Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2). Perc. 1 is instructed to use a '10 qt steel bucket with large metal rod' and plays a rhythmic pattern of eighth notes with accents and triplets, marked with a fortissimo (*ff*) dynamic. Perc. 2 plays a simple eighth-note pattern, also marked *ff*. The piano (Pno.) part features a complex texture with dense chords and sixteenth-note patterns in the right hand, and a few notes in the left hand. The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), and Violoncello (Vc.), all of which are silent. The Double Bass (C.B.) part plays a few notes at the beginning and end of the section, marked with a fortississimo (*fff*) dynamic. The score also includes staves for Electric (Elec), Lights, and Projection (Proj), which are currently blank.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE", starting at measure 310. The score is arranged for a large ensemble, including:

- Fl. (Flute)
- B♭ Cl. (B♭ Clarinet)
- Bsn. (Bassoon)
- Perc. 1 (Percussion 1)
- Perc. 2 (Percussion 2)
- Elec. (Electric Piano)
- Lights
- Proj. (Projection)
- Pno. (Piano)
- Vln. I (Violin I)
- Vln. II (Violin II)
- Vla. (Viola)
- Vc. (Violoncello)
- C.B. (Contrabass)

Key performance markings include *fff* (fortissimo) and *fp* (fort piano) for Perc. 2, and *poco.* (poco) for Vln. II and C.B. The score features complex rhythmic patterns in the Percussion and Piano parts, and sustained chords in the strings and Piano.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

312

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*ff* *fp* *mf*

low tom

*f*

*mf*

*mp*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

314

Fl. *f* 5

B♭ Cl.

Bsn. *f*

Perc. 1

Perc. 2

Elec

Lights (L20) Slowly add Indigo #59 and sparsely add golden colors (Roscosun 1/8 CTO #3410)

Proj

Pno. *f*

Vln. I *f* 5

Vln. II *mf* *f*

Vla. *mf* *f*

Vc. *mf* *ff* pont

C.B. *f*

Detailed description: This page of a musical score, numbered 74, contains measures 314 through 315. The score is arranged in a vertical stack of staves. At the top, the title 'WHAT WE SEE IS WHAT WE DESIRE TO SEE' is centered. The instruments listed on the left are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). Measure 314 shows the Flute and Bassoon playing a melodic line with a forte (*f*) dynamic. The Percussion parts have specific rhythmic patterns. The Piano part features a complex texture with chords and arpeggios. The Violin II part plays a rhythmic pattern with a mezzo-forte (*mf*) dynamic. The Viola part has a similar rhythmic pattern. The Violoncello part plays a melodic line with a mezzo-forte (*mf*) dynamic. The Contrabass part provides a bass line with a forte (*f*) dynamic. Measure 315 features a 'U' (Up-bow) cue for the Flute and a 'pont' (pizzicato) cue for the Violoncello. The Flute and Violin I parts play a melodic line with a forte (*f*) dynamic. The Violoncello part plays a rhythmic pattern with a fortissimo (*ff*) dynamic. A lighting cue (L20) is placed between the Percussion and Projection staves, indicating a change in lighting: 'Slowly add Indigo #59 and sparsely add golden colors (Roscosun 1/8 CTO #3410)'. The page number '74' is centered at the bottom.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

316

Fl. *mf*

B♭ Cl. *mf*

Bsn. *mf*

Perc. 1 *f* wood blocks *mp*

Perc. 2 *mp*

Elec

Lights

Proj

Pno. *mp*

Vln. I *mf* *f* *mp*

Vln. II *mf* *f* *mp*

Vla. *mf* *f*

Vc. *mf* *f*

C.B. *mf* *f*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

318

Fl. *mf*

B♭ Cl. *mf*

Bsn. *mf*

Perc. 1 *f*

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I *mf*

Vln. II *mf*

Vla. *mf*

Vc. *mf*

C.B. *mf*

Detailed description: This page of a musical score, numbered 318, is for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. It features a full orchestral and electronic ensemble. The instruments listed on the left are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Cello (Vc.), and Double Bass (C.B.). The score is written in a key signature of one sharp (F#) and a common time signature (C). The Flute part begins with a melodic line marked *mf*. The B♭ Clarinet and Bassoon parts have a rhythmic pattern of eighth notes, also marked *mf*. Percussion 1 plays a strong, rhythmic pattern marked *f*, while Percussion 2 has a simpler pattern. The Piano part features a complex texture with chords and arpeggios, marked with accents (>) and *mf*. The Violin I and II parts play a rhythmic eighth-note pattern, marked *mf*. The Viola part has a melodic line with accents, marked *mf*. The Cello and Double Bass parts provide a harmonic foundation with long notes and a steady rhythm, both marked *mf*. The score includes various musical notations such as slurs, accents, and dynamic markings.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

319

Fl. *f* *mf*

B♭ Cl. *f*

Bsn. *f* *mf*

Perc. 1 *mp*

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I *f*

Vln. II *f*

Vla. *f* molto. vib *mf* ord

Vc. *f* *mf* ord

C.B. *f* *mf*

Detailed description: This is a page of a musical score for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged in a standard orchestral format with multiple staves. The instruments listed on the left are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score is divided into two measures, with the first measure starting at measure 319. The Flute part features a melodic line with a forte (*f*) dynamic and a five-measure rest in the second measure. The Clarinet and Bassoon parts have a forte (*f*) dynamic in the first measure and a mezzo-forte (*mf*) dynamic in the second. The Percussion parts have a mezzo-piano (*mp*) dynamic in the second measure. The Piano part has a forte (*f*) dynamic in the first measure and a mezzo-forte (*mf*) dynamic in the second. The Violin I and II parts have a forte (*f*) dynamic in both measures. The Viola and Violoncello parts have a forte (*f*) dynamic in the first measure and a mezzo-forte (*mf*) dynamic in the second. The Contrabass part has a forte (*f*) dynamic in the first measure and a mezzo-forte (*mf*) dynamic in the second. The score includes various musical notations such as slurs, accents, and dynamic markings.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score page, numbered 78, contains parts for various instruments and sections. The score is divided into two measures, with measure numbers 321 and 322 indicated at the beginning of each staff. The instruments and sections are:

- Fl.** (Flute): Measure 321 has a melody starting with a forte (*f*) dynamic. Measure 322 has a sustained note with a fortissimo (*ff*) dynamic.
- B♭ Cl.** (Bass Clarinet): Measure 321 has a melody with a forte (*f*) dynamic. Measure 322 has a sustained note with a fortissimo (*ff*) dynamic.
- Bsn.** (Bassoon): Measure 321 has a melody with a forte (*f*) dynamic. Measure 322 has a melody with a forte (*f*) dynamic, transitioning to fortissimo (*ff*) in the second half.
- Perc. 1** and **Perc. 2**: Percussion parts.
- Elec.** (Electronics): A staff with a treble clef.
- Lights** and **Proj**: Staves with a treble clef.
- Pno.** (Piano): A grand staff with two staves. The right hand has chords and the left hand has a rhythmic pattern.
- Vln. I** (Violin I): Measure 321 has a melody with a forte (*f*) dynamic. Measure 322 has a sustained note with a mezzo-forte (*mf*) dynamic.
- Vln. II** (Violin II): Measure 321 has a melody with a forte (*f*) dynamic. Measure 322 has a melody with a mezzo-forte (*mf*) dynamic.
- Vla.** (Viola): Measure 321 has a melody with a forte (*f*) dynamic, marked "pont". Measure 322 has a melody with a mezzo-forte (*mf*) dynamic, marked "ord".
- Vc.** (Violoncello): Measure 321 has a melody with a forte (*f*) dynamic. Measure 322 has a melody with a mezzo-forte (*mf*) dynamic.
- C.B.** (Cello/Bass): Measure 321 has a sustained note. Measure 322 has a melody with a mezzo-forte (*mf*) dynamic.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

323

Fl. *f*

B♭ Cl. *f*

Bsn. *f*

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I *mf* *ff*

Vln. II *mf* *ff*

Vla. *mf*

Vc. *mf* *ff*

C.B. *mf* *ff*

Detailed description: This page of a musical score, numbered 79, contains measures 323-326. The title is 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is for a large ensemble. The woodwind section includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.), all playing a melodic line starting at measure 323 with a forte (*f*) dynamic. The Percussion section (Perc. 1 and Perc. 2) is silent. The Piano (Pno.) part features a complex rhythmic accompaniment with sixteenth-note patterns in the right hand and chords in the left hand. The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The strings play a rhythmic pattern of eighth notes, with dynamics ranging from mezzo-forte (*mf*) to fortissimo (*ff*). The Electric (Elec), Lights, and Projection (Proj) tracks are present but contain no notation.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

**V [III. INDUSTRIAL]**

10 ♩=80

Fl.

Bs. Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Steek bucket with small diameter beater

on rim with triangle beater

regular mallet on the body

record mic 1, 3, 5 square waveform

(E4)

(L21) Slowly dissolves to Metallic Gray (Neutral Grey #398)

Morse codes

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It is a multi-staff score for a large ensemble. The score is divided into five systems, each containing five measures. The instruments and parts are as follows:

- Fl.** (Flute): Rests in the first four measures, then plays a melodic phrase in the fifth measure starting with a forte (*f*) dynamic.
- Bs. Cl.** (Bass Clarinet): Plays a rhythmic pattern of eighth and sixteenth notes throughout the piece, with accents and slurs.
- Bsn.** (Bassoon): Rests throughout the entire piece.
- Perc. 1** (Percussion 1): Plays a complex rhythmic pattern with many accents.
- Perc. 2** (Percussion 2): Plays a simpler rhythmic pattern with accents.
- Elec** (Electric Guitar): Plays a simple harmonic accompaniment consisting of quarter notes and rests, with a flat sign (*b*) indicating a lowered pitch.
- Lights** (Lights): A staff with a treble clef and a flat sign (*b*), likely for light cues.
- Proj** (Projection): A staff with a treble clef and a flat sign (*b*), likely for projection cues.
- Pno.** (Piano): A grand staff (treble and bass clefs) with rests throughout the piece.
- Vln. I** (Violin I): Rests throughout the piece.
- Vln. II** (Violin II): Rests throughout the piece.
- Vla.** (Viola): Rests throughout the piece.
- Vc.** (Violoncello): Rests throughout the piece.
- C.B.** (Cello/Bass): Rests throughout the piece.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

331

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*f*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

335

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Detailed description: This is a page of a musical score for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE', starting at measure 335. The score is arranged in a vertical stack of staves. The instruments included are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric Guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The Flute part features a melodic line with accents and slurs. The B♭ Clarinet and Bassoon parts have rhythmic patterns with accents. Percussion 1 has a complex rhythmic pattern with accents, while Percussion 2 has a simpler pattern. The Electric Guitar part has a steady rhythm with accents. The Lights, Projection, Piano, Violin I, Violin II, Viola, Violoncello, and Contrabass parts are currently silent, indicated by horizontal lines with dashes.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

338

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*f*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is arranged in a standard orchestral format with the following parts:

- Fl.:** Flute part starting at measure 341 with a rest, followed by a melodic line.
- B♭ Cl.:** B♭ Clarinet part with a melodic line in the treble clef.
- Bsn.:** Bassoon part with a melodic line in the bass clef.
- Perc. 1:** Percussion 1 part with a rhythmic pattern.
- Perc. 2:** Percussion 2 part with a rhythmic pattern.
- Elec:** Electric guitar part with a melodic line.
- Lights:** Lights part with a melodic line.
- Proj:** Projection part with a melodic line.
- Pno.:** Piano part in grand staff with complex chordal textures.
- Vln. I:** Violin I part with a melodic line starting at measure 341.
- Vln. II:** Violin II part with a melodic line starting at measure 341.
- Vla.:** Viola part with a melodic line starting at measure 341.
- Vc.:** Violoncello part with a melodic line starting at measure 341.
- C.B.:** Contrabass part with a melodic line starting at measure 341.

Dynamic markings include *f* (forte) and *fz* (forzando) in the string parts.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

344

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*f*

Detailed description: This is a page of a musical score for a large ensemble. The title is "WHAT WE SEE IS WHAT WE DESIRE TO SEE". The page begins at measure 344. The instruments listed are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric Guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The Flute part starts with a dynamic marking of *f* (forte) at measure 345. The score is written in a key signature of one sharp (F#) and a common time signature (C). The percussion parts have specific rhythmic patterns. The string parts (Violins, Viola, Cello, and Contrabass) have more complex rhythmic figures. The Piano part is mostly silent, indicated by rests. The Lights and Projection parts have simple rhythmic notation. The Electric Guitar part has a steady, rhythmic pattern. The overall texture is dense and rhythmic.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

348

Fl. *mp* W

B♭ Cl. *mp*

Bsn. *ff* *mp*

Perc. 1

Perc. 2

Elec *stop*

Lights

Proj Tutti Morse

Pno. *mp*

Vln. I *mp* W

Vln. II *mp*

Vla. *mp*

Vc. *ff* *mp*

C.B. *ff*

Detailed description: This page of a musical score covers measures 348 to 351. The woodwind section includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.), with dynamics ranging from *mp* to *ff*. Percussion (Perc. 1 and 2) is present but silent. Electric guitar (Elec) has a *stop* instruction. Projection (Proj) is marked 'Tutti Morse'. Piano (Pno.) plays a rhythmic accompaniment at *mp*. The string section consists of Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.), with dynamics from *ff* to *mp*. A 'W' symbol in a box indicates a woodwind entry or change in measure 350.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**X**

Fl. *mf*

B♭ Cl. *mf*

Bsn.

**X**

Perc. 1

Perc. 2

Elec

Lights (L22) Add metallic blue (Daylight Blue #65)

Proj dispersed Morse code

Pno.

**X**

Vln. I *pizz.*

Vln. II *pizz.*

Vla. *pizz.*

Vc. *pizz.*

C.B. *pizz.*

*mp*

The musical score is arranged in a standard orchestral format. The woodwind section (Flute, B♭ Clarinet, Bassoon) is at the top, with dynamics of mezzo-forte (mf). The percussion section (Perc. 1, Perc. 2) is below. The string section (Violins I and II, Viola, Violoncello, Contrabass) is at the bottom, with dynamics of mezzo-piano (mp) and playing pizzicato (pizz.). The score includes a 'Lights' cue for 'Add metallic blue (Daylight Blue #65)' and a 'Proj' cue for 'dispersed Morse code'. There are three measures of music, each starting with a boxed 'X' in the top left corner.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It is a multi-staff score for a large ensemble. The instruments included are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score is divided into three measures, with a measure number of 353 indicated at the beginning of each staff. The woodwinds (Fl., B♭ Cl., Bsn.) and strings (Vln. I, Vln. II, Vla., Vc., C.B.) have active parts, while the Percussion 1 and 2, Elec, Lights, and Proj parts are marked with a flat line, indicating they are silent for this section. The Flute and B♭ Clarinet parts feature intricate sixteenth-note patterns with slurs and accents. The strings provide a rhythmic and harmonic foundation with various note values and rests.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

356

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Detailed description: This page of a musical score, numbered 91, contains the instrumental parts for measures 356-358 of the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged in a standard orchestral layout. The woodwind section includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.). The percussion section has two parts (Perc. 1 and Perc. 2). The electric section (Elec), lights (Lights), and projection (Proj) are represented by single staves. The piano (Pno.) is shown with grand staff notation. The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). Measures 356 and 357 show active musical notation for the woodwinds and strings, while measure 358 contains rests for most instruments. The Flute and B♭ Clarinet parts feature intricate sixteenth-note patterns with slurs and accents. The Viola and Violoncello parts play a steady eighth-note accompaniment. The Contrabass part has a more sparse, rhythmic role.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

359 **Y** (Morse code in a humanistic mode with electric melody)

Fl. *mf*

B♭ Cl. *mf*

Bsn. *mf*

Perc. 1 **Y** susp cymb. *mf* vibe with senza pedal *mf*

Perc. 2 Timp *pp* *mf* woodblocks *mf*

Elec *mf*

Lights **L23** Slightly beaming artificial lights (example: Skelton Exotic Sangria #39, Salmon #41, Middle Rose #44, Lilac #55, Light Salmon Pink #30) in a slow pace

Proj

Pno. *mf*

Vln. I **Y** arco. *mf*

Vln. II arco. *mf*

Vla. arco. *mf*

Vc. arco. *mf*

C.B. arco. *mf*



WHAT WE SEE IS WHAT WE DESIRE TO SEE

363

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Detailed description: This is a page of a musical score for a symphonic work. The title is "WHAT WE SEE IS WHAT WE DESIRE TO SEE". The page begins at measure 363. The score is arranged in a standard orchestral format with multiple staves. The woodwind section includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.). The percussion section has two parts, Perc. 1 and Perc. 2. The electric guitar (Elec) part features a dense, rhythmic pattern of sixteenth notes. The piano (Pno.) part has a complex texture with multiple voices in both hands. The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score uses various musical notations such as slurs, ties, and dynamic markings. The overall style is contemporary and detailed.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

366

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

372

Fl. *ff*

B♭ Cl. *ff*

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I *solo*

Vln. II

Vla.

Vc.

C.B.

Detailed description: This page of a musical score, numbered 372, features a variety of instruments. The Flute (Fl.) and Clarinet in B-flat (B♭ Cl.) parts are marked *ff* (fortissimo) and play rapid sixteenth-note passages. The Bassoon (Bsn.) part has a few notes in the first measure. Percussion parts (Perc. 1 and Perc. 2) are mostly silent. The Electric Guitar (Elec) part plays a steady eighth-note pattern. The Piano (Pno.) part has a complex texture with multiple voices. The Violin I (Vln. I) part has a *solo* marking and plays a melodic line with long notes. The Violin II (Vln. II) part plays a dense sixteenth-note accompaniment. The Viola (Vla.) part plays a similar sixteenth-note accompaniment. The Violoncello (Vc.) and Contrabass (C.B.) parts play eighth-note accompaniment patterns.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

374 **AA**

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

**L25** ALL COLORS

end solo

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

*sempre ff*

*sempre ff*

*sempre ff*

*sempre ff*

*sempre ff*

*sempre ff*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

376

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mp* *ff* *mf*

*f* *ff* *f*

Detailed description: This page of a musical score, numbered 98, is titled "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It contains 12 staves of music for various instruments. The Flute (Fl.) staff has a treble clef and a key signature of one flat, with a measure number of 376. The Clarinet in B-flat (B♭ Cl.) staff has a treble clef and a key signature of one flat, with a measure number of 376. The Bassoon (Bsn.) staff has a bass clef and a key signature of one flat, with a measure number of 376. The Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2) staves have a treble and bass clef respectively, with a measure number of 376. The Electric (Elec) staff has a treble clef and a key signature of one flat, with a measure number of 376. The Lights (Lights) and Projection (Proj) staves have a treble clef and a key signature of one flat, with a measure number of 376. The Piano (Pno.) staff has a grand staff (treble and bass clefs) and a key signature of one flat, with a measure number of 376. The Violin I (Vln. I) staff has a treble clef and a key signature of one flat, with a measure number of 376. The Violin II (Vln. II) staff has a treble clef and a key signature of one flat, with a measure number of 376. The Viola (Vla.) staff has an alto clef and a key signature of one flat, with a measure number of 376. The Violoncello (Vc.) staff has a bass clef and a key signature of one flat, with a measure number of 376. The Contrabass (C.B.) staff has a bass clef and a key signature of one flat, with a measure number of 376. The score includes dynamic markings such as *mp*, *ff*, *mf*, *f*, and *ff*. The Flute and Clarinet parts feature complex rhythmic patterns, while the Bassoon part has a simple melodic line. The Piano part has a dense texture of chords. The Violin and Viola parts have a melodic line, and the Violoncello and Contrabass parts have a rhythmic line.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It features a variety of instruments and includes dynamic markings such as *mf*, *f*, and *ff*. The score is divided into two systems, with the first system starting at measure 378. The instruments and their parts are as follows:

- Fl. (Flute):** Starts at measure 378 with a *mf* dynamic, playing a melodic line that transitions to *ff* in the second system.
- B♭ Cl. (Bass Clarinet):** Plays a rhythmic pattern of eighth notes, starting at measure 378 with a *ff* dynamic.
- Bsn. (Bassoon):** Plays a melodic line with a *f* dynamic in the first system and *ff* in the second system.
- Perc. 1 (Percussion 1):** Remains silent throughout the score.
- Perc. 2 (Percussion 2):** Plays a simple rhythmic pattern, including a *mf* dynamic marking.
- Elec. (Electric Guitar):** Plays a rhythmic pattern of eighth notes.
- Lights (Lighting):** No specific notation is provided.
- Proj. (Projection):** No specific notation is provided.
- Pno. (Piano):** Plays a complex rhythmic pattern of eighth notes.
- Vln. I (Violin I):** Plays a melodic line with a *ff* dynamic in the second system.
- Vln. II (Violin II):** Plays a melodic line with a *ff* dynamic in the second system.
- Vla. (Viola):** Plays a melodic line with a *f* dynamic in the first system and *ff* in the second system.
- Vc. (Violoncello):** Plays a rhythmic pattern of eighth notes.
- C.B. (Cello):** Plays a rhythmic pattern of eighth notes.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

380

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*f* *ff* *f* *ff*

(L26) Dissolves to "Black 2" (Storage Indigo #2008)

*fff* *fff* *fff* *fff*



WHAT WE SEE IS WHAT WE DESIRE TO SEE

Only Electronics CC

**BB** CC **[TRANSITION BLACK3. STAGE OF FEAR]**

Fl. 1'30" *ff*

B♭ Cl. 1'30" *ff*

Bsn. 1'30" *mf* *sfz* *mf* *sfz*

Perc. 1 382 1'30" CC

Perc. 2 1'30" Timp *ff*

Elec 382 1'30" electronics Industrial #1 *4/4* (E6) play Stage of Fear #1

Lights 382 1'30" *4/4* (L27) Shift to "Black3" nearly blackout and pin light Yellow (CalColor 60 #4560) constantly moves

Proj 382 1'30" *4/4* play video Transition Black3. Stage of Fear texture of caves

Pno. 382 1'30" *ff* *8<sup>th</sup>*

Vln. I 382 1'30" CC *mf* *ff* *mf* *ff*

Vln. II 1'30" *mf* *ff* *mf* *ff*

Vla. 1'30" *mf* *sfz* *mf* *sfz*

Vc. 1'30" *ff*

C.B. 1'30" *ff*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

385

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mf* *sfz* *mf* *sfz*

*mf* *ff* *mf* *ff*

*mf* *sfz* *mf* *sfz*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

387

Fl. *mf* *f* *ff*

B♭ Cl. *mf* *f* *ff*

Bsn. *f* *ff* *pp*

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I *mf* *ff* *mf* *f*

Vln. II *mf* *ff* *mf* *f*

Vla. *mf* *sfz* *sfz* *f* *pont*

Vc. *mf* *f* *pont*

C.B. *mf* *f* *pont*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**DD**

Fl. *mf*

B♭ Cl. *mf*

Bsn. *p* *f*

**DD**

Perc. 1

Perc. 2

Elec

Lights

Proj *Continues in Black Rocks*

Pno.

**DD**

Vln. I *ff*

Vln. II *ff*

Vla. *ff* *pont*

Vc. *ff* *ord.*

C.B. *ff* *ord.*

The image shows a page of a musical score for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is written in 4/4 time and includes parts for Flute, B♭ Clarinet, Bassoon, Percussion 1 and 2, Electric guitar, Lights, Projection (with the instruction 'Continues in Black Rocks'), Piano, Violin I and II, Viola, Violoncello, and Contrabass. The score is divided into two systems. The first system includes parts for Flute, B♭ Clarinet, Bassoon, Percussion 1, Percussion 2, Electric guitar, Lights, Projection, and Piano. The second system includes parts for Violin I, Violin II, Viola, Violoncello, and Contrabass. The score features various dynamics such as *mf*, *p*, *f*, and *ff*, and includes performance markings like *ord.* and *pont*. The score is marked with 'DD' in a box at the beginning of each system. The page number '104' is centered at the bottom.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is arranged in a standard orchestral layout with the following instruments and parts:

- Fl. (Flute):** Part 1, starting at measure 391 with a *ff* dynamic.
- B♭ Cl. (B♭ Clarinet):** Part 1, starting at measure 391 with a *f* dynamic.
- Bsn. (Bassoon):** Part 1, starting at measure 391 with a *f* dynamic.
- Perc. 1 & Perc. 2 (Percussion):** Parts 1 and 2, both starting at measure 391 with a *p* dynamic.
- Elec. (Electric):** Part 1, starting at measure 391.
- Lights & Proj. (Lights and Projection):** Parts 1 and 2, both starting at measure 391.
- Pno. (Piano):** Part 1, starting at measure 391 with a *f* dynamic.
- Vln. I (Violin I):** Part 1, starting at measure 391 with a *f* dynamic.
- Vln. II (Violin II):** Part 1, starting at measure 391 with a *f* dynamic.
- Vla. (Viola):** Part 1, starting at measure 391 with a *f* dynamic.
- Vc. (Violoncello):** Part 1, starting at measure 391 with a *f* dynamic.
- C.B. (Contrabass):** Part 1, starting at measure 391 with a *f* dynamic.

The score is written in a common time signature (C) and features a variety of dynamics and articulations throughout.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

393

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*p*

6

end *8vb*

Detailed description of the musical score: The score is for a full orchestra and includes parts for Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2), Electric guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score begins at measure 393. The Flute and B♭ Clarinet parts feature a rhythmic pattern of eighth notes with slurs. The Bassoon part has a few notes, including a dynamic marking of *p*. The Percussion parts are mostly rests. The Electric guitar part has a few notes. The Lights and Projection parts are mostly rests. The Piano part features a complex texture with sixteenth-note runs in the right hand and chords in the left hand. The Violin I and II parts have long, sustained notes. The Viola part has a rhythmic pattern of eighth notes. The Violoncello and Contrabass parts have long, sustained notes. The score ends with a dynamic marking of *end 8vb*.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

395

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*ff*

*mf*

*mf*

*mf*

*mf*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

397 no pause

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*f* *fff*

*fff*



WHAT WE SEE IS WHAT WE DESIRE TO SEE

**EE [IV. BATTLE]**

*♩=70*

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

wood blocks

Timp

flz.

**L28**

**play**

"Black" slowly turns into "Bright Red" (Salmon #41)

video of IV. Battle

*mf* *f* *ff* *f* *f* *f* *ff* *f*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

403

Fl. *f* *mp*

B♭ Cl. *f* *mp*

Bsn. *mp*

Perc. 1 *ff* *mp* *mf*

Perc. 2 *ff* *p* *mf*

Elec  $\frac{7}{4}$   $\frac{4}{4}$   $\frac{2}{4}$

Lights  $\frac{7}{4}$   $\frac{4}{4}$   $\frac{2}{4}$

Proj  $\frac{7}{4}$   $\frac{4}{4}$   $\frac{2}{4}$

Pno. *mp* *mf*

Vln. I *mp*

Vln. II *mp*

Vla. *mp*

Vc. *mp*

C.B. *mp* *f*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

406

Fl. *sempre f* *p* *mp*

B♭ Cl. *sempre f* *p* *mp*

Bsn. *f* *f < ff > f*

Perc. 1 *mp* *mf* *mp*

Perc. 2 *mf* *p* *mf*

Elec

Lights

Proj

Pno. *f* *p* *mf*

Vln. I *f* *p* *mp* *pizz.*

Vln. II *f* *p* *mp* *pizz.*

Vla. *f* *p* *f < ff > f* *pont*

Vc. *f* *p* *f < ff > f* *pont*

C.B. *f* *f < ff > f* *pont*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

413

Fl.

B♭ Cl.

Bsn.

*p*

Perc. 1

*p*

Snare

*f*

Perc. 2

*p*

*f*

Elec

Lights

Proj

Pno.

*p*

Vln. I

Vln. II

Vla.

Vc.

ord.

C.B.

*p*

ord.

*p*

ord.

*p*



WHAT WE SEE IS WHAT WE DESIRE TO SEE

(2+3)

429 **FF**

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mf* *ff*

*mf* *ff*

*mf* *ff*

Triangle

*mf* *f* *fp* *f*

*mf* *ff* *fp* *f*

**E8** Hit pad # assign to pre-recorded sound file Bell#1

*ff*

**FF**

*ff* *mf* *f* *mf*

*ff* *f*

*ff*

*ff*

*ff*

*ff*

*ff*

*ff*

*ff*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It is a full orchestral score with the following instruments and parts:

- Flute (Fl.):** Part 1, starting at measure 435. Dynamics include *fp* < *f*, *p* < *f*, and *mf*. Includes a *flz.* (flautando) marking.
- Bass Clarinet (B♭ Cl.):** Part 1, starting at measure 435. Dynamics include *f* and *p* < *f*. Includes a *flz.* marking.
- Bassoon (Bsn.):** Part 1, starting at measure 435. Dynamics include *fp* < *f*.
- Percussion 1 (Perc. 1):** Part 1, starting at measure 435. Dynamic is *f*.
- Percussion 2 (Perc. 2):** Part 1, starting at measure 435. Dynamics include *f*, *mf*, and *f*.
- Electric Percussion (Elec.):** Part 1, starting at measure 435.
- Lights:** Part 1, starting at measure 435.
- Projection (Proj.):** Part 1, starting at measure 435.
- Piano (Pno.):** Part 1, starting at measure 435. Dynamics include *f*.
- Violin I (Vln. I):** Part 1, starting at measure 435. Dynamic is *mf*.
- Violin II (Vln. II):** Part 1, starting at measure 435. Dynamic is *mf*.
- Viola (Vla.):** Part 1, starting at measure 435. Dynamic is *mf*.
- Violoncello (Vc.):** Part 1, starting at measure 435. Dynamic is *f*.
- Double Bass (C.B.):** Part 1, starting at measure 435. Dynamic is *f*.

The score is written in 3/8 time and includes various musical notations such as dynamics, articulation marks, and performance instructions.





WHAT WE SEE IS WHAT WE DESIRE TO SEE

446

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

GG

GG

mf

p mf

E9 Hit pad # assign to pre-recorded sound file Bell#2

GG

mf

f

f

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It features a variety of instruments and includes dynamic markings and performance instructions.

**Woodwinds:**  
Flute (Fl.) and Bass Clarinet (B♭ Cl.) parts are marked with a forte (*f*) dynamic. The Bassoon (Bsn.) part is also marked with a forte (*f*) dynamic.

**Percussion:**  
Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2) parts are present.

**Electronics:**  
The Electronics (Elec) part includes time signature changes from 8/8 to 2/4.

**Piano:**  
The Piano (Pno.) part is marked with a mezzo-forte (*mf*) dynamic.

**Strings:**  
Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.) parts are marked with a mezzo-forte (*mf*) dynamic. The Viola part also includes a forte (*f*) dynamic marking.

The score includes various musical notations such as notes, rests, and dynamic markings, along with time signature changes from 8/8 to 2/4.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is arranged in a multi-staff format. At the top, the title "WHAT WE SEE IS WHAT WE DESIRE TO SEE" is centered. The score includes the following parts:

- Fl. (Flute):** Treble clef, starting with a forte (*f*) dynamic. It features a melodic line with slurs and accents.
- B♭ Cl. (Bass Clarinet):** Treble clef, playing a rhythmic accompaniment with slurs and accents.
- Bsn. (Bassoon):** Bass clef, playing a rhythmic accompaniment with slurs and accents.
- Perc. 1 (Percussion 1):** Indicated by a box labeled "HH" (Hi-Hat) at the beginning of the staff.
- Perc. 2 (Percussion 2):** Bass clef, starting with a mezzo-forte (*mf*) dynamic. It plays a simple rhythmic pattern.
- Elec. (Electric Guitar):** Treble clef, starting at measure 457.
- Lights:** Treble clef, starting at measure 457.
- Proj. (Projection):** Treble clef, starting at measure 457.
- Pno. (Piano):** Grand staff (treble and bass clefs), starting at measure 457. It provides harmonic support with chords and arpeggios.
- Vln. I (Violin I):** Treble clef, starting at measure 457. It plays a melodic line with slurs and accents.
- Vln. II (Violin II):** Treble clef, playing a rhythmic accompaniment with slurs and accents.
- Vla. (Viola):** Alto clef, playing a rhythmic accompaniment with slurs and accents.
- Vc. (Violoncello):** Bass clef, playing a rhythmic accompaniment with slurs and accents.
- C.B. (Double Bass):** Bass clef, playing a rhythmic accompaniment with slurs and accents.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for measures 465 to 468. The score includes parts for Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec.), Lights, Projection (Proj.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.).

Measure 465: Flute has a triplet of eighth notes. Bassoon has a triplet of eighth notes. Percussion 1 has a chord marked *mf*. Percussion 2 has a triplet of eighth notes marked *f*. Piano has a sixteenth-note triplet in both hands. Violin I and II have sixteenth-note patterns. Viola and Cello have sixteenth-note patterns. Contrabass has a triplet of eighth notes marked *f*.

Measure 466: Flute has a 9-measure rest. Bassoon has a quintuplet of eighth notes marked *f*. Percussion 1 has a chord marked *mf*. Percussion 2 has a triplet of eighth notes marked *mp* and a dynamic hairpin to *ff*. Piano has a sixteenth-note triplet in both hands. Violin I and II have sixteenth-note patterns. Viola and Cello have sixteenth-note patterns. Contrabass has a triplet of eighth notes marked *f*.

Measure 467: Flute has a 9-measure rest. Bassoon has a triplet of eighth notes marked *ff*. Percussion 1 has a chord marked *mf*. Percussion 2 has a triplet of eighth notes marked *f*. Piano has a sixteenth-note triplet in both hands. Violin I and II have sixteenth-note patterns. Viola and Cello have sixteenth-note patterns. Contrabass has a triplet of eighth notes marked *f*.

Measure 468: Flute has a triplet of eighth notes marked *ff*. Bassoon has a triplet of eighth notes marked *ff*. Percussion 1 has a chord marked *mf*. Percussion 2 has a triplet of eighth notes marked *f*. Piano has a sixteenth-note triplet in both hands. Violin I and II have sixteenth-note patterns. Viola and Cello have sixteenth-note patterns. Contrabass has a triplet of eighth notes marked *f*.





WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for "WHAT WE SEE IS WHAT WE DESIRE TO SEE", starting at measure 476. The score includes parts for Flute (Fl.), Bass Clarinet (B. Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The key signature has two flats and the time signature is 3/4. Dynamics include *p* (piano) and *mf* (mezzo-forte).



WHAT WE SEE IS WHAT WE DESIRE TO SEE

479

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno. *mf* *p*

Vln. I *p*

Vln. II *p*

Vla. *p*

Vc. *p*

C.B. *mp* *mf*

Detailed description: This page of a musical score, numbered 479, is for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. It features a full orchestral and theatrical ensemble. The woodwind section includes Flute (Fl.), B♭ Clarinet (B♭ Cl.), and Bassoon (Bsn.). Percussion (Perc. 1 and 2) and Electric (Elec) parts are present but have rests. The Piano (Pno.) part is prominent, starting with a mezzo-forte (*mf*) dynamic and transitioning to piano (*p*) in the second measure, featuring complex sixteenth-note patterns with sixteenth-note groupings. The string section consists of Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The strings play a rhythmic pattern of eighth notes, with dynamics ranging from piano (*p*) to mezzo-forte (*mf*). The Contrabass part concludes with a dynamic shift from mezzo-piano (*mp*) to mezzo-forte (*mf*). The score is written in a key signature of one flat and a 4/4 time signature.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

481

Fl. *p* *ff* JJ

Bs. Cl. *p* *ff*

Bsn. *p* *ff*

Perc. 1 JJ  
snare

Perc. 2

Elec 2/4 L29

Lights 2/4 "Bright Red" (Salmon #41) becomes "Dark Red" (Storaro Red #2001) as lines

Proj 2/4

Pno. *mf* *ff*

Vln. I *mf* *ff* JJ

Vln. II *mf* *ff*

Vla. *mf* *ff*

Vc. *mf* *ff*

C.B. *ff* *ff*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

485

Fl.

B. Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*ff*

*p* *f*

6

6

Detailed description: This is a page of a musical score for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged in a vertical stack of staves. At the top, the title 'WHAT WE SEE IS WHAT WE DESIRE TO SEE' is centered. The first staff is for Flute (Fl.), followed by Bass Clarinet (B. Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score begins at measure 485. The key signature has one flat (B-flat), and the time signature changes from 3/8 to 2/4. The Piano part features a sixteenth-note figure with a '6' marking. Dynamic markings include *ff* (fortissimo) and a crescendo from *p* (piano) to *f* (forte). The score includes various musical notations such as slurs, accents, and articulation marks.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

490

Fl.

B. Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Detailed description: This page of a musical score, numbered 128, contains measures 490 through 494. The score is for a large ensemble and includes parts for Flute (Fl.), Bass Clarinet (B. Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The music is written in a key with one flat (B-flat major or D minor) and a 4/4 time signature. The piano part features a complex, rhythmic accompaniment with many sixteenth and thirty-second notes. The strings play a steady, rhythmic pattern. The woodwinds have more melodic and rhythmic lines. The percussion parts are marked with 'v' and 'x' symbols, indicating specific sounds or techniques. The score is presented in a standard musical notation format with a grand staff for the piano and individual staves for the other instruments.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

(4+3)

495 Fl.

495 B♭ Cl.

495 Bsn.

495 Perc. 1 low tom

495 Perc. 2

495 Elec E10 Hit pad # assign to pre-recorded sound file Bell#3 7/16

495 Lights 7/16

495 Proj 7/16

495 Pno.

495 Vln. I

495 Vln. II

495 Vla.

495 Vc.

495 C.B.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

504

Fl.

B. Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

7/16

2/4

Hit pad # assign to pre-recorded sound file MorseCode#1

Detailed description: This is a page of a musical score for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged in a grand staff format with multiple staves for different instruments. The instruments listed are Flute (Fl.), Bass Clarinet (B. Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score begins at measure 504. The time signature is 2/4, which changes to 7/16 in the second measure of each system and returns to 2/4 in the fourth measure. The key signature has one flat (B-flat). The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and rests. There are dynamic markings such as accents (>) and hairpins. The Electric staff includes a circled 'E11' and a note that says 'Hit pad # assign to pre-recorded sound file MorseCode#1'. The Piano staff shows a dense texture of chords and arpeggios. The string parts (Violins, Viola, Violoncello, and Contrabass) play a rhythmic accompaniment with eighth and sixteenth notes. The woodwinds (Flute, Clarinet, Bassoon) have melodic lines with many rests. The percussion parts provide a steady rhythmic foundation.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

This musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It is a multi-staff score for a large ensemble, starting at measure 508. The instruments included are Flute (Fl.), Bass Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score is divided into four measures, each with a unique time signature: 7/16, 2/4, 7/16, and 2/4. The music is written in a key signature of one flat (B-flat major or D minor). The percussion parts feature complex rhythmic patterns, while the strings and woodwinds play intricate melodic and harmonic lines. The piano part provides a dense accompaniment with many sixteenth notes. The electric guitar part is primarily rhythmic, mirroring the percussion. The lights and projection parts are indicated by the same time signatures as the other parts. The score is marked with various dynamics and articulations, including accents and slurs.





WHAT WE SEE IS WHAT WE DESIRE TO SEE

Fl. *mf* 6 *mp*

B♭ Cl. *mp*

Bsn. *mp*

Perc. 1

Perc. 2

Elec E12 Hit pad # assign to pre-recorded sound file MorseCode#2

Lights

Proj

Pno.

Vln. I *mp* 6

Vln. II *mp* 6

Vla.

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

521 **LL**

Fl. *mf* *ff*

B♭ Cl. *mf* *ff*

Bsn. *mf* *ff*

Perc. 1 *ff*

Perc. 2 *ff*

Elec *ff* Hit pad # assign to pre-recorded sound file Noise#1 pattern

Lights *ff* (L30) Red lines disperse from few to bunch "Dark Red" rhythmically response to music

Proj *ff*

Pno. *mf* *f*

Vln. I *mf* *ff*

Vln. II *mf* *ff*

Vla. *mf* *ff*

Vc. *mf* *ff*

C.B. *mf* *ff*

The musical score is for a 7/16 time signature piece. It features a variety of instruments including woodwinds (Flute, B♭ Clarinet, Bassoon), percussion (Perc. 1, Perc. 2), electronics (Elec), lighting (Lights), projection (Proj), piano (Pno.), and strings (Violin I, Violin II, Viola, Violoncello, Contrabass). The score is divided into two main sections by a double bar line. The first section starts at measure 521 and ends at measure 526. The second section starts at measure 527 and ends at measure 532. Dynamics range from mezzo-forte (mf) to fortissimo (ff). The woodwinds and strings play rhythmic patterns, while the piano has a more melodic line. The percussion and electronics provide a steady, rhythmic accompaniment. The lighting and projection cues are synchronized with the music, with the lights changing from a few red lines to a bunch of red lines in response to the music.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

525

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Detailed description: This page of a musical score, numbered 136, contains the instrumental parts for measures 525 through 528. The score is arranged in a vertical stack of staves. The instruments included are Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The Flute, Clarinet, Bassoon, and Projection parts feature complex rhythmic patterns with many accents. The Percussion parts consist of steady eighth-note patterns. The Piano part has a dense texture with many notes and accents. The string parts (Violins, Viola, Cello, and Contrabass) play rhythmic patterns with accents. The Electric, Lights, and Projection parts are represented by simple rhythmic symbols. The score is written in a key signature with one flat (B♭) and a common time signature (C).

WHAT WE SEE IS WHAT WE DESIRE TO SEE

529 Fl.

529 B♭ Cl.

529 Bsn.

529 Perc. 1

529 Perc. 2

529 Elec (E14) Hit pad # assign to pre-recorded sound file Noise#2

529 Lights

529 Proj

529 Pno.

529 Vln. I

529 Vln. II

529 Vla.

529 Vc.

529 C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

MM

Fl. *mf*

B♭ Cl.

Bsn. *mf*

Perc. 1

Perc. 2

533 Elec (E15) Hit pad # assign to pre-recorded sound file MorseCode#3

533 Lights (L31) "Dark Red" becomes darker "Dark Red 2" (Roscosun 1/4 CTO #3409)

533 Proj

Pno. *mf*

MM

533 Vln. I

Vln. II *mf*

Vla. *mf*

Vc. *mf*

C.B. *mf*

Detailed description of the musical score: The score is for a 4/4 piece. It features a complex arrangement of instruments. The woodwinds (Flute, B♭ Clarinet, Bassoon) play melodic lines with sixteenth-note patterns. The percussion (Perc. 1 and 2) provides a rhythmic foundation with eighth-note patterns. The piano (Pno.) plays a steady accompaniment of eighth notes. The strings (Violins I and II, Viola, Violoncello, Contrabass) provide harmonic support with sustained notes and rhythmic patterns. The electronics (Elec) and lights (Lights) are triggered at measure 533. The score includes dynamic markings such as *mf* and **MM** (Mezzo Forte). Specific performance instructions are provided for Perc. 1, Perc. 2, Elec, and Lights.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

535

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged for a symphony orchestra and includes parts for woodwinds, percussion, electronics, lights, projection, piano, strings, and double bass. The score is divided into two systems, with the first system starting at measure 537. The woodwind section (Flute, B♭ Clarinet, Bassoon) features complex rhythmic patterns with accents and slurs. The piano part includes intricate textures with sixteenth-note runs and chords. The string section (Violins I and II, Viola, Violoncello) provides a melodic and harmonic foundation, while the double bass part includes a triplet figure. Percussion parts 1 and 2 are mostly silent, with Percussion 2 having a few notes in the second system. The score includes various musical notations such as accents, slurs, and dynamic markings like *f*.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

**NN** [TRANSITION BLACK4. BLACKHOLE/SINKING]

539

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

**NN**

**E16** Hit pad # assign to pre-recorded sound file Noise#3

**L32** Add "Darker Purple" (Storaro Indigo #2008); "Dark Red" becomes "Darker" (CalColor 60 Red #4660)

*p*

*fp*  $\longleftarrow$  *mf*

*p*

*pizz.*

*p*

*p*

*p*

*p*

*p*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

542

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Hit pad # assign to pre-recorded sound file Noise#3

Hit pad # assign to pre-recorded sound file Noise#3 continue the pattern

*mp*

*p*

*mp*

*p*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

546

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*pp*

*mp*

*p*

*arco*

Detailed description: This page of a musical score, numbered 143, contains measures 546 through 549. The score is for a large ensemble including woodwinds, percussion, electronics, lights, projection, piano, strings, and a double bass. The woodwind section (Flute, B♭ Clarinet, Bassoon) has a melodic line starting in measure 546, with dynamics *p* and accents. The piano part features a complex texture with dynamics *pp*, *mp*, and *p*. The string section (Violin I, Violin II, Viola, Violoncello) provides harmonic support with dynamics *pp* and *mp*, and the Viola part includes *arco* markings. The Percussion 1 and 2 parts are silent. The Elec, Lights, and Proj parts are also silent. The Contrabass part has a simple bass line.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

550

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mf*

*mf*

Detailed description: This page of a musical score, numbered 144, contains measures 550 through 553. The score is for a large ensemble. The Flute (Fl.) part features a melodic line with accents and slurs. The Bass Clarinet (B♭ Cl.) and Bassoon (Bsn.) parts provide harmonic support with chords and rhythmic patterns. The Percussion (Perc. 1 and Perc. 2) parts are currently silent. The Electric (Elec), Lights, and Projection (Proj) parts are also silent. The Piano (Pno.) part has a complex texture with arpeggiated chords and moving lines in both hands. The Violin I (Vln. I) and Violin II (Vln. II) parts play sustained chords, with the Vln. II part marked *mf*. The Viola (Vla.) part has a rhythmic pattern of eighth notes. The Violoncello (Vc.) part has a rhythmic pattern of eighth notes with accents. The Contrabass (C.B.) part has a simple bass line. The score is written in a key with one sharp (F#) and a common time signature.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

554

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

**E19** add pad # assign to pre-recorded sound file Noise#4

*p* *mp*

*p* *mp*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

558

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

558

Elec

(E20) add pad # assignend to pre-recorded sound file Noise#5

Lights

558

Proj

Pno.

558

Vln. I

Vln. II

Vla.

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

562

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

562

Elec

ⓔ21 stop Hit pad # assignd to pre-recorded sound file Noise#3 pattern

Lights

Proj

Pno.

562

Vln. I

Vln. II

Vla.

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". The score is arranged for a large ensemble and includes the following parts:

- Fl.** (Flute): Melodic line with accents.
- B♭ Cl.** (Bass Clarinet): Harmonic accompaniment.
- Bsn.** (Bassoon): Harmonic accompaniment.
- Perc. 1** and **Perc. 2** (Percussion): Rhythmic accompaniment.
- Elec** (Electric): Electronic accompaniment.
- Lights** and **Proj** (Lights and Projection): Visual effects.
- Pno.** (Piano): Harmonic accompaniment with *mf* dynamics.
- Vln. I** and **Vln. II** (Violins): Melodic lines with *mf* and *mp* dynamics.
- Vla.** (Viola): Harmonic accompaniment.
- Vc.** (Violoncello) and **C.B.** (Contrabass): Harmonic accompaniment.

The score begins at measure 566 and spans four measures. The piano part includes a *mf* dynamic marking. The violin parts include *mf* and *mp* dynamic markings.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

570

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mp*

*p*

*pizz.*

*p*

3

Detailed description: This is a page of a musical score for the piece 'WHAT WE SEE IS WHAT WE DESIRE TO SEE'. The score is arranged in a standard orchestral layout with multiple staves. The instruments included are Flute (Fl.), Bass Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1) and Percussion 2 (Perc. 2), Electric (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Double Bass (C.B.). The music begins at measure 570. The Flute part has a dynamic marking of *p*. The Bass Clarinet part has a dynamic marking of *p* and includes a triplet of eighth notes. The Bassoon part has a dynamic marking of *p*. The Piano part features a complex texture with arpeggiated chords and moving lines in both hands. The Violin I and II parts have dynamic markings of *mp* and *p*. The Viola and Violoncello parts have dynamic markings of *p*. The Double Bass part has a dynamic marking of *pizz.* (pizzicato). The score is written in a key signature of one sharp (F#) and a common time signature (C).

WHAT WE SEE IS WHAT WE DESIRE TO SEE

575

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec (E22) no electronics

Lights (L33) dissolves to "BLACK" (blackout)

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

8

mp

p

pp

p

pp

ppp

arco

p

pp

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**OO [V. AFTER BATTLE]**

Fl. *p*

B♭ Cl. *p*

Bsn.

Perc. 1

Perc. 2

582 **OO**

582 Elec **E23** **process2** granular + filter delay

582 Lights **L34** Light blue (CalColor 7.5 Cyan #4307) + Light Touch Frost #102 slowly merges

582 Proj **play** video V. After Battle

Pno. *pp* *pp* *non espress.*

**OO**

582 Vln. I *p* *mp* *pp* *p* *pp* *poco* *mf mp*

Vln. II

Vla.

Vc.

C.B.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

593

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Tamtam soft mallets

*p* < *mf*

593

Elec

Lights

Light Blue (CalColor 7.5 Cyan #4307) slowly dissolves to "Light Blue 3" (CalColor 15 Cyan #4314)

593

Proj

593

Pno.

593

Vln. I

*p* *pp* *poco* *p* *mp* *poco* *p*

Vln. II

Vla.

Vc.

C.B.

*pizz.*

*mp*

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is arranged in a system with the following parts from top to bottom: Flute (Fl.), Clarinet in B-flat (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec.), Lights, Projection (Proj.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.).

Key features of the score include:

- Dynamic Markings:** *pp* (pianissimo) and *mf* (mezzo-forte) are used throughout. Percussion 2 has a dynamic range from *p* to *pp*. Violin I has a dynamic range from *pp* to *mp*.
- Tempo and Meter:** The score is in 2/4 time, with a tempo change to 4/4 at the end of the system.
- Lighting:** A lighting cue (L36) is present, reading: "Light Blue 3" (CalColor 15 Cyan #4314) dissolves to "Light Green" (Tough 1/8 Plusgreen). This cue is associated with a circled measure number (L37).
- Rehearsal Markers:** Boxed markers labeled **PP** and **QQ** are placed above the Flute, Percussion 1, and Violin I staves.
- Instrumentation:** Flute, Clarinet, Bassoon, Percussion, Electric, Projection, Piano, Violin I, Violin II, Viola, Violoncello, and Contrabass.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

611

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

$p < mf > p$        $pp$        $p > pp$        $pp$        $p > pp$        $mp$

Light Green" (Tough 1/8 Plusgreen) dissolves to "Forest Green" (CalColor 60 Green #4460)

"Forest Green" (CalColor 60 Green #4460) dissolves to Darker Green (Storaro Green #2004)



## **Reflection**

### **I. Color**

#### **A. Human Relationship with Color**

##### **1. Light and Our Perception of Color**

We are able to see things because light illuminates objects and surroundings.<sup>8</sup> We understand those objects in certain ways depending on how light illuminates them.<sup>9</sup> This illumination allows us to see, perceive, and recognize objects. Color perception, which results from any stimulation caused by the retina reaction to different lengths of light waves to brain nerves. Richard Palmer mentions that the perception of color depends on three variables—“the spectral composition of the light source, the chromatic selectivity of the object reflecting the light and the complex eye and brain response of the viewer.”<sup>10</sup> He also states that the appreciation of physical phenomenon is based on limitations of visual perception. The eye responds absolutely to brightness and “eyes cannot accurately differentiate the components of a color mixture, [and] persists in seeing a visual phenomena for which there is no direct external stimulus.”<sup>11</sup>

The brain accepts information selectively for perception. It adjusts what we perceive through the eyes. Even though we have the ability to see a wide range of brightness, we narrow it depending on the situation. After being exposed to a particular illumination for a specific period, the eye accepts the level (the brightness adaptation

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<sup>8</sup> Max Keller, *A Journey into Light with Max Keller*, DVD (Munich: Prestel Verlag, 2006).

<sup>9</sup> J. Michael Gillette, *Designing with Light: An Introduction to Stage Lighting*, 5th ed. (New York: McGrawHill, 2008), 1-2.

<sup>10</sup> *Ibid.*, 84.

<sup>11</sup> *Ibid.*, 64.



level). Anything outside of this level would be “black,” and ‘all stimuli would be seen as black.’<sup>12</sup> The eye needs more time to adjust to large changes in illumination and less time to adjust to longer wavelengths.<sup>13</sup>

## **2. Eye as Receptor and Brain as Interpreter**

When we see an illuminated object, our eyes function as receptors, and send an electrical message to the brain, which interprets the mixing of colors. Kelley mentions that the eye allows us to perceive “differences in brightness, color differences, shapes, movements, and distances.” Different wavelength appears as different colors.<sup>14</sup>

The retina contains photosensitive chemicals (rhodopsin). The amount of resolution possible is partly a product of the physical size of the receptors (cones and rods). The retina is covered with 75 to 150 million rods, which are sensitive to small amounts of light but make practically no color discrimination, and 6 or 7 million cones, which are principally responsible for color vision. Scotopic, or twilight vision, depends on primarily on the sensitivity of rods, while photopic or daylight vision, depends more on cone sensitivity.<sup>15</sup> The data from the various photoreceptor cells are sent through the nerves to the brain and causes a sensory reaction.<sup>16</sup> The brain makes sense of this information.<sup>17</sup>

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<sup>12</sup> Richard H Palmer, *The Lighting Art: The Aesthetics of Stage Lighting Design*. 2nd ed. (NJ: Prentice-Hall, 1994), 67-8.

<sup>13</sup> *Ibid.*, 71.

<sup>14</sup> Max Keller, *Light Fantastic: The Art and Design of Stage Lighting* (New York: Prestel, 2006), 25.

<sup>15</sup> Richard H Palmer, *The Lighting Art: The Aesthetics of Stage Lighting Design*. 2nd ed. (NJ: Prentice-Hall, 1994), 90-1.

<sup>16</sup> Max Keller, *Light Fantastic: The Art and Design of Stage Lighting* (New York: Prestel, 2006), 26.

<sup>17</sup> Nick Moran, *Performance Lighting Design: How to Light for the Stage, Concerts and Live Events*. (London: A & C Black Publishers Ltd, 2007).

### 3. Discerning Color

According to Richard Palmer, the brain does not neutrally respond to information conveyed by the eye. It imposes an experience filter. For example, we expect a banana to be yellow from previous experience. We persist in seeing it as yellow even though it might not reflect yellow light. The brain has a filter-that selects information required to satisfy immediate physical and emotional demands.<sup>18</sup>

Light consists of the electromagnetic spectrum with a narrow band of ultra and infrared light. The selective reflectance of specific wavelengths of light allows us to see the color of objects relatively. For example, a red object absorbs and converts other wavelengths to heat except the one that creates the impression of red in the eye.<sup>19</sup> White light can pass through any filter (glass, plastic, air, etc.) and any portion of the spectrum can be absorbed. Colored filters pass their own hue and absorb other wavelengths. We see red because other colors are absorbed through the filtering medium. If we illuminate a red object with blue, the object might look black, because no red light is available to be reflected.<sup>20</sup>

We also perceive colors resulting from a mixture of individual hues, which create another color for the brain to interpret. This is called additive color mixing. For example, a combination of the primary hue red and primary green creates secondary yellow. The red and green cones cause this effect. The red and green light stimulates our eyes and the brain interprets this neurological information as yellow. The level of stimulation that the

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<sup>18</sup> Palmer, *The Lighting Art: The Aesthetics of Stage Lighting Design*, 66.

<sup>19</sup> *Ibid.*, 87-9.

<sup>20</sup> Nick Moran, *Performance Lighting Design: How to Light for the Stage, Concerts and Live Events* (London: A & C Black Publishers Ltd, 2007).

red, blue, and green cones receive designates how the brain perceives incoming information and tells us to recognize in a certain way.<sup>21</sup>

We perceive color with three elements—hue, saturation and brightness. We distinguish color with hue. Saturation is the percentage of hue in color or the degree of whiteness, while brightness is the perception of the intensity of the apparent difference from black. These are chroma.<sup>22</sup> Primary colors are unmixed hues. Secondary colors are a mixture of two primary colors, and complementary colors are any two hues combined (creating white in light or black in pigment). Shadows have a lower reflectance than the adaptation level, and we tend to see shadows as complementary colors.<sup>23</sup>

#### **a. Relationship between color and our senses**

Colors have psychological significance and imply different meanings. Ancestral experiences inherited thousands of years ago might cause us to perceive colors in specific ways. We analyze received information of color we see subconsciously by experiences we learn.<sup>24</sup> Gunther mentions the influences of childhood in terms of the relationship between color and the senses in that:

“...all people with normal vision and a rich exposure to the visual world will use the word red to refer to a certain set of visual sensations. Furthermore, they can distinguish the sensation of “red” from other colors like “green” or “blue.” More generally, they have established, from experiences in childhood and onward, a vocabulary to describe their sensations of color in response to various inputs of light.”<sup>25</sup>

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<sup>21</sup> J. Michael Gillette, *Designing with Light: An Introduction to Stage Lighting*, 5th ed. (New York: McGrawHill, 2008), 144.

<sup>22</sup> Palmer, *The Lighting Art: The Aesthetics of Stage Lighting Design*, 90-1.

<sup>23</sup> Gillette, *Designing with Light: An Introduction to Stage Lighting*, 140-143.

<sup>24</sup> *Ibid.*, 3.

<sup>25</sup> Gunther, *The Physics of Music and Sound*, 414.

For example, the association of dark blue and night darkness might suggest frightening primal moments. Our ancestors traveled mountains on foot at night without knowing what would happen. A dangerous threat, such as the appearance of a tiger, could occur anytime. In stage lighting, blue light is conventionally used for night scenes because blue-green is the last color seen before the shift to achromatic night vision.<sup>26</sup> Daylight shadows have more of a blue tint than direct sunlight, so there is “some learned association between shadow and blueness.”<sup>27</sup>

Some experiences correspond with the physics of light. Red has a longer wavelength than blue. The color groups with a longer wavelength (e.g. red, yellow) are usually sensed as warmer than the color groups with a shorter wavelength (e.g. blue).<sup>28</sup> Color temperature reflects experience with nature. Through the experience of sun and fire, humans understand these as hot. The colors of sun and fire are yellow and red, so we attach these to warm colors. In contrast, we feel cold when we imagine ice-blue mountain lakes either from winter ice and snow or a refrigerator. Green mediates.<sup>29</sup>

Many scholars or artists have tried to establish a correlation between colors and psychological effects. Moran mentions that a metaphor for light is “understanding for clarity, and clear perception, for inspiration, for bringing joy, or for excitement,” while a metaphor of reduction or absence of light is “fear, danger, for hidden action, deceit, dishonesty, sadness or rejection.”<sup>30</sup> Goethe saw categories of colors in a dichotomous way—yellow/black, +/-, impact/deprivation, light/shade, bright/dark, strength/weakness,

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<sup>26</sup> Richard H Palmer, *The Lighting Art: The Aesthetics of Stage Lighting Design*, 103.

<sup>27</sup> Max Keller, *Light Fantastic: The Art and Design of Stage Lighting*, 27.

<sup>28</sup> *Ibid.*, 27.

<sup>29</sup> *Ibid.*, 38.

<sup>30</sup> Moran, *Performance Lighting design: How to Light for the Stage, Concerts and Live Events*.

warmth/coldness, closeness/distance, repulsion/attraction, and related to pH level.<sup>31</sup>

Richard Palmer further suggests that red, yellow and orange are associated with excitement, stimulation, and aggression—yellow-gaiety, cheerfulness, and fun; red-passion; blue and green; calm and security; blue; more introspection; purple-dignity and sadness; black, brown, and gray; melancholy, sadness, and depression.<sup>32</sup> Keller organized color with its relation to the oppositional concept—negative/positive, cold/warm, dark/light, shady/sunny, transparent/opaque, soothing/exciting, thin/thick, distant/near, hard/soft, light/heavy, moist/dry. He also divides colors into three activity levels— active with yellow, red, magenta; inactive with green; passive with blue-green, cyan, violet.<sup>33</sup> Walter connects the degree of arousal with color spectrum; long-wavelength colors like red, orange, and yellow as arousing and short-wavelength colors at the other end of the spectrum like blue, indigo, and violet as relaxing. In these terms, colors in the area of green on the spectrum would be expected to be relatively neutral.<sup>34</sup>

The qualities, components, perceived attributes, and perspectives all affect how we discern color.

## **b. Emotional Responses**

Certain colors advocate certain emotions.

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<sup>31</sup> Keller, *Light Fantastic: The Art and Design of Stage Lighting*, 36.

<sup>32</sup> Palmer, *The Lighting Art: The Aesthetics of Stage Lighting Design*, 101.

<sup>33</sup> Keller, *Light Fantastic: The Art and Design of Stage Lighting*, 38.

<sup>34</sup> Jean Walters, Michael J. Apter, and Sven Svebak, "Color Preference, Arousal, and the Theory of Psychological Reversals," *Motivation and Emotion* 6, no. 3 (September 1, 1982): 198.

## **i. Biological**

Color is among the strongest stimuli that our brains receive from the outside world. It has been found to affect heart rate, time perceptions, estimates of weight, size, and temperature, as well as how we experience loudness and noise.<sup>35</sup>

“Biologically some color effects are thought to represent inherent tendencies to interpret and respond to color in a manner similar to that observed in our nonhuman primate relatives. Other color effects are thought to be rooted in the repeated pairing of color and particular concepts, messages, and experiences; over time, these pairings create strong and often implicit color associations such that the mere perception of the color evokes meaning-consistent affect, cognition, and behavior. Furthermore, it is likely that some color-meaning links, especially those that are observed across time and culture, are a product of the cognitive reinforcement and shaping (via social learning) of an initial biologically engrained predisposition.”<sup>36</sup>

## **ii. Cultural**

Color perception is also socially related. Humans perceive color through the eyes, but the understanding and interpretation of color is dependent on situation and background every time. If a particular situation changes, or differs from country to country, or group to group, the perception of color carries of the potential to be inconsistent.

Biologically and culturally based explanations of color effects are not mutually exclusive. Elliot and Maier in *Color Psychology* indicate how biological traits induce influence “in the context of impactful social learning histories and cultural norms that may support and extend, or may stifle or even countervail, inherent propensities.”<sup>37</sup>

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<sup>35</sup> Frank H Mahnke, *Color, Environment, and Human Response* (New York: John Wiley & Sons, 1996), 71-77.

<sup>36</sup> *Ibid.*, 99.

<sup>37</sup> Andrew J Elliot and Markus A. Maier, “Color Psychology: Effects of Perceiving Color on Psychological Functioning in Humans,” *Annual Review of Psychology* 65, no. 1 (January 2014): 111.

Besides biological responses resulting from human blood and physiology or natural environment, contextual traits control color perception. There have been experiments discover color perception influenced by context and culture include empirical tests and several researchers caution against making broad, global statements about color since color preferences vary by country, race, sex, and age.<sup>38</sup> Elliot and Maier emphasize empirical methods in investigating effects of color on human beings and focus on the meaning of colors in terms of both biology and culture.

One case treats distinct sports teams in conjunction with their social conditions and their interpretation of uniform color. Group A might feel more power to win with a red shirt, but that color is less relevant to group B. It is also possible that the effect of red functions differently depending on situation: team vs. one-on-one competition or collaborative vs. adversarial. Elliot and Maier found that facial color affects emotional interpretation. Women find men more aggressive, dominant, and attractive when their faces are redder. Some men see red clothing as a sexual signal, and there is a cultural construct for women to use that signal.<sup>39</sup>

The same color can have different meanings depending on the perceiver. Red is the color of blood, life and death from a biological understanding, but the same red can cause an opposite emotional reaction.<sup>40</sup>

Valdez and Mehrabian in *Effects of Color on Emotions* reinforce the fact that the context in which color is used can have a substantial bearing on the generalizability of the

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<sup>38</sup> Andrew J Elliot and Markus A. Maier, "Color Psychology: Effects of Perceiving Color on Psychological Functioning in Humans," *Annual Review of Psychology* 65, no. 1 (January 2014):110.

<sup>39</sup> *Ibid.*, 104-107.

<sup>40</sup> *Ibid.*, 109.

present findings. Although blue might seem a pleasant color, blue hair or blue food, for example, is not necessarily expected to elicit a pleasant reaction. On the contrary, such stimuli may elicit unpleasant reactions because of the inappropriateness of the color on the particular stimulus. Thus, findings have relevance where colors are probable realistic elements.<sup>41</sup>

There are several empirical studies about the effect of color. One is a study between colors and mood-tones. Wexner selected a list of eleven mood-tones: 1. Exciting, stimulating; 2. Comfortable; 3. Distressed, disturbed, upset; 4. Tender, soothing; 5. Protective; 6. Despondent, dejected, unhappy, melancholy; 7. Calm, peaceful, serene; 8. Dignified, stately; 9. Cheerful, jovial, joyful; 10. Defiant, contrary, hostile; and 11. Powerful, strong, masterful.

He chose four different groups as subjects to see the influence of socioeconomic status. Ninety-four Purdue students—half of whom were male and half female, twenty-five Louisiana State University students—eighteen males and seven females, sixty-nine male nursing assistants at the Gulf- port Division of the Biloxi VA Center and the vast majority of these patients were the subjects. They were asked to select the one color from the colors on the charts that they felt best represented the feelings described by the word groups. Eight colors—yellow, orange, red, purple, brown, blue, black, and green—were used.

Wexner raised the question of cultural and biological determinants of these associations of mood-tones and colors. Interestingly, he found that regardless of mood-

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<sup>41</sup> Patricia Valdez and Albert Mehrabian, "Effects of Color on Emotions," *Journal of Experimental Psychology: General* 123, no. 4 (1994): 394–409.



tone, the Purdue students seemed to choose orange, purple, and black far more than did the other groups, and red and green far less. Both patients and aides chose purple far less than other groups. Nursing assistants chose green and blue far more than the others. The different choices suggest that “the associations are, at least in part, learned rather than inborn.” Socioeconomic status thus differentiates their choice of colors regarding mood.<sup>42</sup>

Walters also suggests two emotional states. One is the telic state, which is the state associated with low arousal preference. This state of mind is a serious one, and the concern is more likely to be with the future than the present. Individuals in this state plan ahead whenever possible. The other is the paratelic state, which is the state associated with high arousal preference. This state of mind is more lighthearted and playful. The orientation of individuals is toward the present and their enjoyment. People in this state have a preference for spontaneity rather than planning.

Forty-one subjects took part in the second study. Each subject was asked to make a color preference choice based on three sets: 1) playful/serious, 2) spontaneous/planning ahead, 3) bored/excited/anxious/relaxed. The fact that low-arousal colors were preferred when adjectives indicated a telic state and high arousal colors were preferred when adjectives indicated a paratelic state could be related to biology.

When subjects thought that high arousal was pleasant and low arousal unpleasant, they individually rated the color as arousing. In contrast, when subjects thought that high arousal was unpleasant and low arousal pleasant, they individually rated color as the

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<sup>42</sup> David C. Murray, and Herdis L. Deabler, “Colors and Mood-Tones,” *Journal of Applied Psychology* 41, no. 5 (1957): 279–83.

opposite.<sup>43</sup>

Valdez conducted empirical studies to correlate emotional reactions to color hue, saturation, and brightness. She used the Pleasure-Arousal Dominance (PAD) Emotion Model. It has eight different stages—+P+A+D: admired, bold, creative, powerful, vigorous, +P+A—D: amazed, awed, fascinated, impressed, infatuated, +P—A+D: comfortable, leisurely, relaxed, satisfied, unperturbed, +P—A—D: consoled, docile, protected, sleepy, tranquilized, -P+A+D: antagonistic, belligerent, cruel, hateful, hostile, —P+A—D: bewildered, distressed, humiliated, in pain, upset, —P—A+D: disdainful, indifferent, selfish-uninterested, uncaring, unconcerned, —P-A-D: bored, depressed, dull, lonely, sad.

The emotional impact in terms of biological cause is shown among the groups. The brighter and more saturated colors, the more pleasant. Brightness had a considerably stronger effect than saturation on pleasure. The less bright and more saturated colors, the more arousing. Less bright and more saturated colors induced greater feelings of dominance in viewers. Darker (less bright) colors elicited feelings of strength or boldness. More saturated colors (more vivid, purer, or stronger) also induced feelings of dominance. The effect of brightness was considerably stronger than that of saturation in determining dominance responses to color. Even though men and women reacted with similar emotional responses to brightness and saturation levels of color, women were slightly more sensitive regarding their emotional reactions to brightness and saturation

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<sup>43</sup> Walters, Apter, and Svebak, "Color Preference, Arousal, and the Theory of Psychological Reversals," 193–215.

compared with men.<sup>44</sup>

Even though there are factors that cause biological emotional impacts, because we live in society with individual identity, color interpretation can be varied. Perhaps, a certain color suggests specific meanings, and we use those meanings to perceive colors through metaphor. But the context of colors plays an important factor in comprehension.

Darkness may produce a feeling of fright due to the fact that one cannot see things, but also may induce a state of comfort for the same reason.

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<sup>44</sup> Valdez and Mehrabian, "Effects of Color on Emotions," 394–409.

## B. Color Charts

Below are charts with suggestive emotional responses paired with colors in the individual studies.

Figure 1. Table: Color Chart for Red Orange Yellow Green

Color	Red	Orange	Yellow	Green
Gillette	happy, affectionate, loving, exciting, striking, active, intense, defiant, powerful, masterful, strong, aggressive, hostile,	warm, happy, merry, exciting, stimulating, hot, disturbed, distressed, unpleasant	stimulating, cheerful, exciting, joyful, serene, unpleasant, aggressive, hostile	youthful, fresh, leisurely, secure, calm, peaceful, emotionally controlled, ill
Keller	dominant, power and energy, symbolizes love, life, blood, addresses the greatest range of human feelings heavy,	joy, relaxation, passion, overthrow sound: loud, major key	pure yellow-brightest in the chromatic circle-fertility, blessing, abundance gold-power, glory, and majesty, dominant effect-moves into foreground sound: piercing, major key	spring, youth, hope, darker green loses this, a full and healthy life vegetative, full bodily life the most peaceful, green+yellow=youthful, lively, and active green+brown=heavier, serious

	dark red-dignity, burning serious, cardinal red- overthrow Bright red- excitement, warmth, joy with pink hue- light hearted, joyful and young sound:loud, trumpet			sound: muted, shrill
Palmer	passion excitement, stimulation, aggression, deeper red: threat, anxiety outgoing flattering to all skin colors	excitement, stimulation, aggression	gaiety, cheerfulness, fun, excitement, stimulation, aggression, associated with brightness,	calm, security, least flattering for human skin tones, neutral
Goldstein	outward, happiness, dominate, to win, vivid fruit, life, ripe, attractive			

Walters	arousing, stimulating, exciting, cheerful, defiant, powerful	disturbed	higher arousing than orange and violet	
Valdez	strong, active	disturbed,	least arousing, weak and bad, less pleasant	less pleasant, less arousing

Figure 2. Table: Color Chart for Blue Purple Violet and Other Colors

Color	Blue	Purple	Violet	Others
Gillette	pleasant, cool, secure, comfortable, tender, soothing social, dignified, sad, strong, full, great		dignified, stately, vigorous, disagreeable, sad, despondent, melancholy, unhappy, depressing	Brown secure, comfortable, full, sad, disagreeable
Keller	color of sky, enigmatic, distant, soothing, serious, cold, yearning, undertone of sadness, drawing back, blueblack-overwhelming cosmic mourning ultramarine-cool, agreeable, calming, peaceful effect (passivity) blue, and green; reticent and freshness, so yearning but soothing Sound: soft	sovereignty, dignity, might sound: powerful, solemn	not cold not warm, mystical, odd tension, reluctance Ethereal, -with blue red- violet=refined, delicate dark red violet=dignified, episcopal purple	Brown earthiest, densest, most real powerful, health, solidity, earthiness mixed with red or violet=sunshine on earth violet brown-magic, mystery sound: dark, minor gold-radiates warm toneless, soulless, majestic quality with radiance as sun, gold expresses the

			<p>lighter shades of</p> <hr/> <hr/> <hr/> <p>violet, white and yellow-intense and feminine</p> <p>sound: sad, deep, minor key</p>	<p>highest life force, in spiritual terms</p> <hr/> <p>power and dignity,</p> <hr/> <p>silver-toneless, soulless-radiates cool</p> <hr/> <p>radiance-as gray it is assigned to colored objects but lessens their joyful quality</p> <hr/> <p>not enticing but attracts gently</p> <hr/> <p>silver is 'the light among the metals' → many people feel that it is nobler than gold</p> <hr/>
Palmer	calm, security, encouraging introspection, emphasizes the veins in human skin, lifeless,	artificial, rich	melancholy	Brown-sadness, melancholy, depression
Goldstein	inward, sad, trusty-worthy			
Walters	relaxing		confusing	
Valdez	comfortable, secure,		less arousing	



Figure 3. Table: Color Chart for Black, White and Gray

Color	Black	White	Gray
Achromatic			
Gillette	sad, melancholy, vague, unhappy, dignified, stately, strong, powerful, hostile, distressed, fearful, old	pure, tender, soothing, solemn, empty	
Keller	serious, negative, dark, mourning Sound: confined, angular, hard, inscrutable	beyond good and evil gaiety innocence, purity	gloom Indecision Indifferent, toneless, neither warm, nor cool background or secondary color balance and neutralize sound: pause in music
Palmer	sadness, melancholy, depression		sadness, melancholy, depression
Valdez	powerful, strong, masterful, aggressive, bad, inactive	bad, weak, inactive, intermediate value	good, weak, the most pleasant

Figure 4. Table: Color Chart for Emotional Effects of Instruments

	Instruments/sounds	moods	moods	Sound/musical examples
Green	flute, oboe	Um-pa, bright major	fast, walking	
Yellow	strings in mid and high bell, light, constant rhythm melody in high happiest moment	bright major Ravel sound in 3/4 with flute or waltz early romance movies for romance scenes	lifting stable hypnotic (darker yellow) As lighting	to raise-from bottom to top dovetailing <i>Le Jardin Féerique</i>
Red	brass harsh, percussion dangerous melody + different rhythm	dissonance Minor 2nd	intense, ostinato, fast	loud, danger
Orange	mid range instruments longing repetition techno Night music	ostinato exotic ostinato pattern-slow triumph eastern glow low earthy range	mid ostinato moon universe moon on the black sky low woodwinds calm warm	light at night moonlight <i>Einstein on the beach</i> Backlight of car
Black	chaotic vs. serene	unknown, crazy passages		
Violet	quieter texture	few notes 12 tone slow atonal	mid high range	<i>Prelude à la Nuit</i>

## II. Aesthetics of Color and Music

### A. Color Artists

Through the twentieth century, painters experimented with relationships of color and form, abstract art, and painting with music.<sup>45</sup> Gauguin is one of the artists who saw the close relationship between music and visual art through colors. Gauguin and Maurice Denis described their works not as representations of life but as arrangements of lines and color — expressing the intangibility of dreams in visual art and linking new methods to the abstract nature of music. Gauguin thought his paintings expressed color arrangements and lines connected to his brain, not necessarily with images and ideas, but similar to the way music expresses.<sup>46</sup>

Belmont was a color-music expressionist painter with an innovative method. He was interested in synesthesia, and he admitted that he used a synesthetic perception through color as an association with musical sound. He formed his style as color-music neo-expressionism through works inspired by composers—Bach, Beethoven, Wagner, Elgar, and Sibelius. One example is *An Expression from Fantasia on a Theme of Tallis by Vaughan Williams*. In which, he interpreted colors from white to red to orange.<sup>47</sup>

Kandinsky saw the emotional connection between music and color. He emphasized the importance of souls as an artist, and he mentioned that color affects the soul. He wrote “color is the keyboard. The eye is the hammer. The soul is the piano, with

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<sup>45</sup> Fred Collopy, “Color, Form, and Motion: Dimensions of a Musical Art of Light,” *Leonardo* 33, no. 5, 356.

<sup>46</sup> Paul Roberts, *Images: The Piano Music of Claude Debussy* (Portland, OR: Amadeus Press, 1996) 40.

<sup>47</sup> Allan W. Atlas, “I.J Belmont’s “Color –Music Expressions” (Pt 1): Vaughan Williams on Canvas,” *Music in Art* 36, no. 1/2 (2011): 327-345.

its many strings.”<sup>48</sup> For him, red light stimulated and excited the heart, while blue light caused temporary paralysis. He mentioned color’s psychological effects and thought that colors produced a corresponding spiritual vibration.<sup>49</sup> He connected blue with the different timbres of musical instruments depending on intensity—light blue with flute, darker blue with cello, still darker with double bass, and the darkest with the organ. Yellow, less “deep” than blue, he connected with madness rather than depression.

For him, white is silence like the ice age, while black is silence without possibility. “The silence of black is the silence of death.”<sup>50</sup> For him, white blurred every color, and symbolized joy and spotless purity, while black symbolized grief and death. Gray, a blend of black and white, was silent and motionless in contrast to the activity of green. Mixing gray with green or red meant “a spiritual blend of passivity and glowing warmth.”<sup>51</sup>

An influential visual music artist John Whitney saw color as ‘providing a large textural vocabulary to audiovisual artists, as orchestration serves the symphonic to composers.’<sup>52</sup>

Modern artist Paul Klee thought that color was secretive, irrational and suggestive, and it had shades just as music had tones.<sup>53</sup>

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<sup>48</sup> Shaw-Miller, *Visible Deeds of Music*, 71.

<sup>49</sup> *Ibid.*, 44-5.

<sup>50</sup> *Ibid.*, 58-61.

<sup>51</sup> *Ibid.*

<sup>52</sup> John Whitney, *Digital Harmony: On the Complementary of Music and Visual Art* (Peterborough, NH: Byte Books, 1980).

<sup>53</sup> Hajo Duchting, *Paul Klee: Painting Music* (Munich, Germany: Prestel, 1997), 45-6.

Ann Driver associated color with musical accents and claimed “when strong colors are used to provide an impulse to a graphic movement, they are like the accents which give music its life.”<sup>54</sup>

## **B. Color Musicians**

There have been attempts to connect color with music throughout the ages. As some artists connect the color of their artworks to musical elements, some composers express their musical compositions with color and relate them to art. The method with which each composer chooses to apply color in music varies. One method is a mapping technique in which color is directly applied to musical elements. A good example of a musical instrument which maps color to music is the color organ. Louis-Bertrand Castel invented the color organ in the eighteenth century. Later, D.D. Jameson, Bainbridge Bishop, and A. Wallace Rimington created color organs concurrent to the inventions of electronic music instruments in the early twentieth century. Alexander Scriabin later built a color keyboard—a “color organ”—with glass of varied hues. Through illuminated apertures, each note from a spectrum band is mapped to the color of notes through a consistent aural and visual analogy. From middle C (red), each note is assigned a different hue. He later “adopted” Rimington’s method and made his own color keyboard to realize the concept of resolving musical and color discord simultaneously.<sup>55</sup> Scriabin assigned certain chords in different keys in the circle of fifths to colors—C=Red,

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<sup>54</sup> Ann Driver, *Music and Movement* (London: Oxford University Press, 1936) 34.

<sup>55</sup> A. Eaglefield Hull, *A Great Russian Tone-Poet, Scriabin*, 2nd ed. (London: K. Paul, Trench, Trubner & Co., Ltd., 1927), 216-29.

G=Orange, D=Yellow, A=Green, E=Pale blue, B=Very pale blue, F#=Bright blue, Db=Violet, Ab=Purple, Eb=Metallic gray/blue, Bb=Blue-gray, F=Dark red.<sup>56</sup>

Scriabin felt that new ideas from artists would bring divinity through the expression of reality and the arts would reach their ‘potential only through synthesis’ similar to Richard Wagner’s Gesamtkunstwerk. Scriabin’s *Mysterium* incorporated “colored light, music, scenes, and tastes.”<sup>57</sup>

Scriabin’s philosophy relates to the universe and idealism and some scholars even connect his music with the social conditions of the Russian revolution. Vic Delson noted that Scriabin’s music developed artistically with the revolutionary movements of 1907 and 1917. Soviet composer, Rodion Shchedrin, also saw coincidences between Scriabin’s music and the 1905 Revolution.<sup>58</sup> Scriabin agreed with Marx about the collapse of Capitalism, but thought that art could bring “real change rather than social or political revolution.”<sup>59</sup>

When Scriabin walked, he often imagined himself flying and Sovetskaya Rossiya suggested a connection between Scriabin and Einstein.<sup>60</sup> Pavchinsky, in *Scriabin’s Compositions of the Late Period*, mentioned that young people without an “idealistic [mystical] world view” liked the *Poem of Ecstasy*. As Bower mentions in *The New Scriabin; Enigma and Answers*, Scriabin had a precept that “consciousness determines being” and the mysticism in *Poem of Ecstasy* successfully invited a young audience into

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<sup>56</sup> Shaw-Miller, *Visible Deeds of Music*, 67.

<sup>57</sup> Shaw-Miller, *Visible Deeds of Music*, 59-62.

<sup>58</sup> Faubion Bower, *The New Scriabin; Enigma and Answers* (New York: St. Martin’s Press, 1973), 15.

<sup>59</sup> Driver, *Music and Movement*, 34.

<sup>60</sup> Bower, *The New Scriabin; Enigma and Answers*, 15.

the world of dreams.<sup>61</sup> Whereas Pavchinsky tried to distinguish cosmic emotions from cosmic colors, Scriabin created pictures of mystic nature for the enrichment of the human soul.<sup>62</sup>

Scriabin saw art as magic, and sound as “shifting lights, the play of gestures, triumphal processions, sacerdotal dances, billowing scents, touching caresses, ritualistic and exorcistic prayers, light and church lamps, smoking incense, etc.”<sup>63</sup> Delson connected Scriabin’s *Second Symphony in C Minor Op. 29* (1901) to a painting by Mikhail Vrubel. The symphony *Poem of Fire* (Scriabin’s the last tone poem) was the first multi-media composition calling for lighting effects in the score.<sup>64</sup> These were not employed for individual tones, but rather for tonalities and chordal complexes. Color music becomes light music.

Scriabin agreed with Rimsky Korsakov’s view that the musical harmony induces emotional effects as light and dark, major and minor, and joy and sorrow.<sup>65</sup> After reading Helena Balavatsky’s *The Key to Theosophy*, he noted “Theosophy’s colors for vowel sounds and emotions—red for anger, yellow for intellect, gray-green for deceit, black for hatred, etc.”<sup>66</sup>

Scriabin is a pioneer of synesthetic art in the twentieth century. Baker connected the influences between other concurrent musicians and artists; Wagner’s synthesis of the arts, colored melody, harmony, and rhythm by Berlioz, and Symbolism by Rimbau

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<sup>61</sup> Bower, *The New Scriabin*, 17-18.

<sup>62</sup> *Ibid.*, 105.

<sup>63</sup> *Ibid.*, 107-8.

<sup>64</sup> Hull, *A Great Russian Tone-Poet, Scriabin*, 193.

<sup>65</sup> Bower, *The New Scriabin*, 184-194.

<sup>66</sup> *Ibid.*, 122.

(painter) noting that Scriabin was deeply influenced by his environment and connected the elements of painting to his music. Baker continues to explain Scriabin's music with its relation to color by connecting the synesthetic experience resulted from "the coordination of light and music" to the "ultimate unification of the universe."<sup>67</sup> Baker further connected Scriabin's orchestration with visionary depiction (such as lights) and as part of a larger period in which other composers combined sound with colors.<sup>68</sup>

Scriabin's method of composition is unique, compared to Strauss, Elgar, Debussy, Cyril Scott, or Ravel. He once said, "There is no difference between harmony and melody. They are one and the same."<sup>69</sup> "Mysticism dominated Scriabin's music." He liked the sound of Zvon, Russian bells, and stated that the sound of the bell was "joyous, ominous, alarming and beautiful."<sup>70</sup>

Scriabin created unconventional chords and linked them to certain feelings based on his personal philosophy and mysticism. Instead of key centers and scales, he incorporated the harmonic series. The 'mystic chord' is constructed from the first thirteen partials of the harmonic series, arranged in 4ths. Augmented 11ths, minor 7ths, 3rds, 13ths, and 9ths appear in *Prometheus*, the *Seventh Sonata*, the *Feuillet d'album*, Op. 58.<sup>71</sup>

Some composers create music in association with color in a manner similar to a way artist use color in painting. Claude Debussy's music is often considered to have a

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<sup>67</sup> James M. Baker "Prometheus and the Quest for Color-Music: The World Premiere of Scriabin's *Poem of Fire with Lights*, New York, March 20, 1915," in *Music and Modern Art*, ed. James Leggio (New York: Routledge, 2002), 66.

<sup>68</sup> Baker "Prometheus and the Quest for Color-Music: The World Premiere of Scriabin's *Poem of Fire with Lights*, New York, March 20, 1915," in *Music and Modern Art*, 63-73.

<sup>69</sup> Bowers, *The New Scriabin; Enigma and Answers*, xiii -15

<sup>70</sup> Ibid., 111-2.

<sup>71</sup> Hull, *A Great Russian Tone-Poet, Scriabin*, 105-7.



connection to Impressionism and Symbolism. *Pelléas et Mélisande* perhaps resulted from the consideration of light represented in paintings of Impressionism and Symbolism. The music in Act 3, scene 3, of *Pelléas* could be interpreted as a reflection of the light from a seashore in the distance and bridges Impressionist and Symbolist thought.<sup>72</sup>

Symbolism search for passion, and anxiety to express the soul and mystery with sonority and color. The way of him expressing music with shape and timbre is often analogous to the way of impressionists using colors. Impressionists dealt with light and Debussy correspondently used soft resonances and vibrations to make sound shifts and transformations in *Reflets dans l'eau*.<sup>73</sup>

Debussy incorporated colors in *En Blanc et Noir*. He wanted to draw ‘their color, their emotion, and simply from the piano, like the “grays” of Velázquez’ and expressed subtlety of color, emotion and gradation as well as the use of neutral color gray in the piece.<sup>74</sup> Debussy’s *Nocturnes* are also music related to color. Debussy mentioned a visible metaphor for *Nocturnes* as “lit from behind.”<sup>75</sup> Whistler’s paintings—*Nocturne in Blue and Silver* or *Symphony in White No. 2* might have influenced *his Nocturnes*.

Debussy wrote a program note for *Nocturnes* in which it sounded as if he described images from Whistler’s paintings:

“The title *Nocturnes* is to be interpreted here in a general and, more particularly, in a decorative sense. Therefore, it is not meant to designate the usual form of the Nocturne, but rather all the various impressions and the effects of light that the word suggests—*Nuages* renders the slow, solemn motion of the clouds, fading

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<sup>72</sup> Roberts, *Images: The Piano Music of Claude Debussy*, 117-8.

<sup>73</sup> *Ibid.*, 19-35.

<sup>74</sup> *Ibid.*, 141-4.

<sup>75</sup> *Ibid.*, 35.

away in grey tones lightly tinged with white... *Sirènes* depicts the waves silvered by the moonlight.”<sup>76</sup>

Olivier Messiaen viewed a reaction derived from seeing as an analogous to a reaction derived from listening, said that he saw complexes of colors in his mind when hearing music, and understood the physiology of color (such as aftereffect and simultaneous contrast between two complementary colors). The relationship between complementary colors is analogous to harmonics heard when a fundamental note is struck. In *Music and Color: Conversations with Claude Samuel*, Messiaen noted that after a person stared at a red circle surrounded by a white zone long enough, they saw a flashing color of green in the zone. He subsequently applied similar aftereffects in his musical composition.<sup>77</sup>

Massiaen connected musical elements with colors and believed that humans perceived colors both visually and aurally. He saw a physiological relationship between color and music and believed that color perception might connect to musical perception. In his mind's eye, he sensed colors while hearing music and transformed them. Unlike Scriabin, he did not believe in a mutual relationship between keys and color. Rather, he saw color complexes as chords and sonorities. He linked his Mode 2 to violet, blue, and violet purple, and Mode 3 to orange with red and green pigments. Among preferred color was violet, which is complex because it is a mixture of cold and warm color.<sup>78</sup>

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<sup>76</sup> Roberts, *Images: The Piano Music of Claude Debussy*, 140-1.

<sup>77</sup> Claude Samuel, *Oliver Messiaen Music and Color: Conversations with Claude Samuel*, trans. E. Thomas Glasow (Portland, OR: Amadeus Press, 1994), 61-2.

<sup>78</sup> *Ibid.*, 40-3.

Brian Eno considers color to be an important aspect of music. Influenced by the composer John Cage, he believes in a conceptual unity of the arts through different approaches and ways of thinking. Landscape painting relates to ambient music. He tries to create music in relation to Abstract Expressionist painting in texture as in dry or moist. His music is not programmatic, but texturally and physically abstract,<sup>79</sup> and uses pitches outside of the equal temperament with sounds that move from unrecognizable point to other unrecognizable points. For Eno, timbre refers to the color of sound as well as light and a vertical harmonic spectrum determines the color of the sound. Eric Tamm suggests that Eno's music contains more vertical meaning in music than horizontal. Brian Eno, calls himself a painter of sound. Tamm likens Eno's way of creating music to a painter filling a canvas through mixing, blending, and shaping.<sup>80</sup>

Eno often creates ambient music. Compositionally, he works with sound to develop musical textures and he creates virtual acoustic spaces with electronics (his 'real instruments') in order to create music reflective of different moods and atmospheres. He thinks ambient music induces calmness and creates a space to think and thus shapes both sound and space. *Discreet Music* (his first ambient record) is modal, textured, calm, and sonically warm.<sup>81</sup>

Morton Feldman saw color as a language to express music. Feldman felt that the formal controls associated with rhythm, pitch, and dynamics were less important than a

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<sup>79</sup> Tom Schnabel, *Rhythm Planet: The Great World Music Makers*, (New York: University Pub, 1998), 36-40.

<sup>80</sup> Eric Tamm, *Brian Eno: His Music and the Vertical Color of Sound* (Winchester, MA: Faber and Faber, 1989), 40-44.

<sup>81</sup> Brian Eno, "Ambient Music," in *The Book of Music and Nature: An Anthology of Sounds, Words, Thoughts*, ed. David Rothenberg and Marta Ulvaeus (Middletown, Conn: Wesleyan University Press, 2001), 139-142.

new identity from these musical elements to be found in the indeterminacy and especially sound with its own shape, design, and poetic metaphors.<sup>82</sup> His approach to composition was related to visual artist's approach to painting and saw the process of harmonic construction as "constant architectural decisions" in coloration or orchestration. He did not see chords as harmony.<sup>83</sup> Amy C. Beal discusses how Feldman later applied visual techniques into his music.<sup>84</sup>

But there were difficulties in connecting music and color. Some would say that a harmonic idea feels more related to color than note information and the other would say the timbre is the only link between color and music. Hull mentions that the connection between color and music is more related by the emotion than a single note to the other color.<sup>85</sup>

### **C. Current Application of Color Light for Visual Works**

Art experimentation develops new ideas and techniques, but commerce frequently exploits its potentials.

Hans Beller explains how sound supports filmed image in the development of the cinematography and their inevitable relationships. He also explains how the written word transforms into image and sound at the same time and provides the process that Disney

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<sup>82</sup> Louise Goldstein, "Morton Feldman and the Shape of Time," in *Perspectives on American Music since 1950*, ed. James R. Heintze (New York: Garland, 1999), 67-70.

<sup>83</sup> Thomas DeLio, *The Music of Morton Feldman: Contributions to the Study of Music and Dance* (Westport, Conn: Greenwood Press, 1996), 110.

<sup>84</sup> Amy C. Beal, "Time Canvasses: Morton Feldman and the Painters of the New York School," in *Music and Modern Art*, ed. James Leggio (New York: Routledge, 2002).

<sup>85</sup> Hull, *A Great Russian Tone-Poet, Scriabin*, 228.

adopted in synchronizing two media.<sup>86</sup> Diedrich Diederichsen talks about image within the cultural format of pop music. It shows how musical elements in pop music such as rhythm, pitch, duration and tone color influence the image and other visual stimuli in relation to commodity and mass culture.<sup>87</sup>

Stanley Kubrick's epic science fiction film *2001: A Space Odyssey* (MGM, 1968) contains images which reinforce the audience's comprehension of the main character's increasingly alienated perspective. Kloman sees *2001* as having psychedelic elements that encourage the open imagination of the audience through the flow of images, "shapes and motion, sounds and special effects."<sup>88</sup> Clark suggests that the visual impact of color in the film is both effective and mystical—"the stark-white spacecraft, seen from some comically omniscient point of view, floats in a blue-black sea speckled with stars, moons of Jupiter drift."<sup>89</sup>

The use of electronic music in *Gravity* (Warner Brothers, 2013), and *Man of Steel* (Warner Brothers, 2013) creates the tone of blue and metal in dark shades. The music, with its heavy and indistinguishable combination of electronics and instruments expresses both image and color. In Brian Large's production of *Tristan und Isolde* (Metropolitan Opera 2001), the entire stage light changes from blue to red depending on emotional

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<sup>86</sup> Hans Beller, "Between the Poles of Mickey Mousing and Counterpoint," in *See This Sound*, ed. Dieter Daniels, Sandra Naumann, and Jan Thoben (Köln, Germany: Verlag der Buchhandlung Walter König, 2011), 103-109.

<sup>87</sup> Diedrich Diederichsen, "Sound and Image Worlds in Pop Music," in *See This Sound*, ed. Dieter Daniels, Sandra Naumann, and Jan Thoben (Köln, Germany: Verlag der Buchhandlung Walter König, 2011), 121-135.

<sup>88</sup> Glenn Man. *Radical Visions: American Film Renaissance, 1967-1976* (Westport, Conn: Greenwood Press, 1994), 66.

<sup>89</sup> Arthur C. Clark, "The Sentinel (2001: A Space Odyssey)" in *Stories into Film*. 1st ed. Steven M. Krauzer, and William Kittredge (New York: Harper Colophon Books, 1979), 222.

contents.<sup>90</sup> *Einstein on the Beach*, a collaboration between Robert Wilson and Philip Glass presented by LA Opera (2013), features a prominent lighting design which shifts from achromatic to chromatic colors and includes perspective like moonlight.

James Turrell's installations use monochromatic color and provide concentric experiences to the audience and has used the color of pure light as a medium for over half a century. He manipulates spaces with light by limiting the appearance of objects in order to permit viewers to concentrate color. He states that his work has no object, no image and no focus.

“With no object, no image and no focus, what are you looking at? You are looking at what you are looking.”

Turrell thought it was important to create an experience of wordless thought and considered the sky a canvas. New Yorker critic Calvin Tompkins wrote “His [Turrell's] work is not about light or a record of light; it is light — the physical presence of light made manifest in sensory form.”<sup>91</sup> *Pace London 2014* consists of different rooms with lightings by different colors. *London Millenium Dome Rest in Zone Exhibition* is an interactive installation to explore how the audience interacts with the color of lights and composer Jam Jammer Finer composed a one thousand year-long composition, *Long Player* for Turrell's installation.

DJ music coincides with the lighting of a stage most of the time, even during the daytime. In a club, light is essential to arouse excitement from the audience and draw the

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<sup>90</sup> Keller, *A Journey into Light with Max Keller*, DVD.

<sup>91</sup> James Turrell, *Introduction*, James Turrell, accessed April 7, 2015  
<http://jamesturrell.com/about/introduction/>

attention to the DJ. It also changes in response to the mood of the music. Instant emotional reactions to different colors enhance the interaction between the DJ and the audience.

#### **D. Experimentation with Color in Musical Composition**

Several types of research about color and perception and their relationship to music imply that human emotion is a liaison. Kandinsky treated emotional impact as an agency to link music and color. He emphasized the importance of the human soul as an artist and mentioned that color affects it.<sup>92</sup>

When we see a certain object or environment, we feel something. When we listen to music, we feel something. In preparing to work on *What We See is What We Desire to See for Color and Instruments*, I created series of subjective experiments in the association of existing music of color and existing recorded compositions. Through these experiments, I tried to come up with ways to find emotional pivot points between color and music.

I came up with an idea to set a certain group of parameters regarding the relationship between music and color, especially hue, saturation, and brightness.<sup>93</sup> Kandinsky conceded color's impact as falling within two categories: temperature (warm and cool), and brightness (light and dark).<sup>94</sup>

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<sup>92</sup> Kandinsky, *Concerning the Spiritual in Art and Painting in particular 1912*, 66-7.

<sup>93</sup> Valdez, and Mehrabian, *Effects of Color on Emotions*, 394.

<sup>94</sup> Kandinsky, *Concerning the Spiritual in Art and Painting in particular 1912*, 54.

In terms of temperature, colors on the right spectrum have colder temperatures than the ones on the left. High frequency sound suggests cold. Red has a longer wavelength, more energy and warmer temperature than blue. Red is often considered to be warm and passionate while blue is considered calm and cool. A study about color preference and arousal shows that people see red as arousing/exciting and blue as calming.<sup>95</sup>

The period for high-frequency sound shorter than low-frequency sound so that lower frequencies have more energies than higher ones. Different energy levels in respective frequency zones shape divergent emotional impacts regarding temperature. The sound in a high-frequency area projects colder feelings than the sound in low-frequency area. We often describe the bass sounds as warm and treble sounds as shrill, sparkling, or exciting, perhaps more related to chilling. But the effects of color and sound can operate differently. Color in short wavelength like blue gives an impression of depth. Conversely, sounds with short wavelengths sounds lighter giving impression of lightness than one with longer wavelengths. A sound with high-frequencies can be intense (rather than calm) depending on the composition . With considerations of these complexities, there are different ways to juxtapose colors and music.

First I chose colors considered to have specific impact in terms of emotions—red, blue, and achromatic colors; black, white, and gray—to connect tones and saturation of hues. Then I selected colors that are between two extreme sides—yellow, orange, green. I

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<sup>95</sup> Jean Walters, Michael J. Apter, and Sven Svebak, “Color Preference, Arousal, and the Theory of Psychological Reversals,” *Motivation and Emotion* 6, no. 3 (September 1,1982), 211-214.



started the experiment by setting parameters to connect color and music. I considered various emotional responses to set parameters. I established the main parameters, shades and tones by lightness and value, temperature, transformation, tempo, texture, and medium in four different levels in both sound and color. The first four levels of shades are from dark, mid, normal daylight to extreme brightness while the four levels of sound tones are from noise to purified sound. The process started from a simple set of environments and it became more complicated later to produce more definite control elements.

Figure 5. Table: Main Parameters

Color	1. Lightness, Value	Music	
Dark→bright		Distortion, Noise -> pure	
	2. Temperature	Timbre	
Red (warmth)→ Blue (coldness)		Warm -- (Instrument) Low register	Cold (electronic) High register
Movement between colors or groups of color	3. Transition, Transformation, Rhythm	Soft Hard Mid	
Speed	4. Tempo	Tempo	
Slow, fast, mid		Slow, fast, mid	
	5. Texture		
Number of colors in one space		Density in vertical mode	
	6. Medium, Material		
Glass, glue, plastic, metal, wood, concrete		Instrumentation	

For studies on color and music, I chose a group of music and color that would properly match a range of emotional intensities that I sought.

Figure 6. Table: Music to Emotion

Ambient-temperature (warm)	Brian Eno- <i>Discrete Music</i>
White, Sparse texture, coldness	Claude Debussy- <i>Reflets dans L'eau, Des pas sur la Neige</i> Arvo Pärt – <i>Kyrie</i> from <i>Berliner Messe</i>
Cold (temperature)	Gérard Grisey- <i>Partials</i> , Hans Zimmer- <i>Man of Steel</i> , Steven Price- <i>Gravity</i>
Calm, Darkness	Dimitri Shostakovich 3rd movement from <i>Piano trio No. 02 Op. 67</i>
Rhythmic, Passionate, Intense	Igor Stravinsky <i>Rite of Spring, Firebird</i>
Cheerful, warm	Maurice Ravel- <i>Le Tombeau de Couperin</i>

Figure 7. Table: Color to Emotion

Passion, Fast rhythms, Dominant	Red
Cool, Chilly, Calm, Cold,	Blue
Warm, Cheerful	Yellow
Playful, nature, pastoral	Green
Outgoing, Playful	Pink
Calm, Meditation, Darkness, Uncertainty, Scare	Black
Cold, Sparse, Surreal, Sacred	White

The interpretation of color is subject to change by the application of shades—lightness from dark to bright. I edited the audio of music, placing it with different colors and shades. I chose a video image with a ‘neutral’ photo of an environment, and added color to each. The first experiment started with achromatic colors-white and black and

slowly added chromatic colors-blue, yellow, red, magenta, and green. For music, the first experiment started with a slow tempo and various levels of textures (largely caused by registration).

I started the experiment with black and white colors in their relation to the slowness in speed and emptiness in texture. An initial idea for the color white connects it to indifference and emptiness. White seems to have openness in space. Because of this quality, the initial assumption I had was if the music was slow and has sparse texture, it would match with white.

Nevertheless, in the first piece, I experienced a different result. I chose Shostakovich *Piano Trio No.2 in E minor Op. 67: III. Largo*. The reason I chose this piece was from my original thought that music would be the right match for the white regarding the textural sparseness. I played it with white first, but the impact of the piece was not greater than when I just played the music itself. The openness and brightness of white seem to distract from the music. The sparse music started with slow progression of chords in a limited register, which was in the middle (not high). The violin slowly added a heavy melody line. The deeper sound of the cello reinforced the solemnity of the violin countermelody. Even though the texture of the piece was sparse, the white color failed to match because the character of the melody line itself and its average register dominated the piece.

I tested Shostakovich *Piano Trio No.2 in E minor Op. 67: III. Largo* with black as the experiment no. 2. It worked much better. Black emphasized the music's character of solemnity and space. The darkness in black seemed to have the power to absorb every

moment and erase the sense of boundaries in space. The color invited me into a world with possibilities (similar to white), but because of the darkness, it generated calmer feelings of openness sinking downward. The invisibility of darkness matched the dark musical quality. Musically, the piano repeated eight-chord progression from Bbm to E. Violin and cello joined the solemn and determined conversation with the piano intermittently, interweaving with the higher and lower register of the chord sounds. The repetition of the chord in the middle register gave the impression of a heart pounding slowly. Creating a meditative state of darkness affirmed by the melody and countermelody of the violin and cello. These chunky, slow, and repetitive qualities in the music brought me into a world of limitless unknown thought and emotional process and into a black hole.

I tested Arvo Pärt's *Kyrie, Agnus Dei* from *Berliner Messe*, and *De Profundis* with white as the experiment no. 3. This piece was also texturally sparse. The result of the test with color white was more successful than the previous Shostakovich. This piece matched my assumption about emptiness and sparseness in music and color. The music included the human voices, and moved very slowly. The organ appeared in some places with exceedingly sparse texture in the *Kyrie, Agnus Dei* worked well white because the register was exceptionally high and the texture sparse. The brightness and incapability to experience color as wished created a surrealistic imagination about potential color. The slow harmonic progression with slowly moving voices creates an emotional quality of floating or flying like a feather. Entering the new world was similar to the darkness, but the emotional impact was different. This time it was closer to entering a world of safety,

or sanctuary. Staggered melodic lines in strings created a steady horizontal texture containing fluctuating voices crossing freely. The repetition of the harmonic progression in organ and bells over the voice in *De Profundis* created a hypnotic quality which was complemented by white.

The experiment no. 4 was Arvo Pärt's *Berliner Messe Kyrie* and *Agnus Dei*, and *De Profundis* with black. The color black created a different feeling than before and did not seem to match as well as white. In Shostakovich's piece, black absorbed me as a listener into unknown world as a universe, but with Arvo Pärt's piece, I did not feel the same black hole. Instead, music seemed a separate entity from the visual. There seemed no connection between these two elements especially, in *De Profundis*.

The *Agnus Dei* and *Kyrie* caused different emotions. The emotion was not about peace or surrealistic sanctuary; rather lament, grief, and tragedy. It reminded me of being in a funeral or site of a horrible battlefield with dead bodies laid hopelessly on the cold ground.

White is bright and black is dark. Bright light exposes its surroundings, so white light relates to the world outside or somewhere in the air. When this brightness did not meet with musical experience in a piece such as Shostakovich's, the expected sense of color got disrupted. The experiment of Shostakovich's piece with black solved for me the problem in the discrepancy between two media.

In addition to experiments in the association of color with other music, I have composed several musical pieces featuring the relationships between color and music:

*Black and Yellow* for flute, clarinet, violin and cello (2015) was inspired by Franz Kline's painting, *Black Reflection*. I applied parameters relating to color and music in order to coordinate the interconnectivity. I linked the horizontal line of the painting to musical time and the vertical line as instrumental register. I separated the parts with more saturated colors from the parts with less saturated colors to structure the form. The left and right side of the painting has low saturation levels compared to the center. I considered these as differences in brightness and density, and applied them to develop the texture of the music. So the beginning and the ending of the piece have sparse texture while the texture in the middle is condensed. I assigned instruments to colors; flute as light blue, clarinet as yellow, violin as red, and cello as black. I assigned massive black and a little bit of red to the rhythmic intensity in the middle part of the piece. The rhythm with the cello is dominant in the middle section because the black color covers every other color in the original middle of the painting.

*Crystal Glass* for piano and electronics (2015) depicts cloudy, but somewhat transparent lightness through the sonority of an integration between piano and electronics. The sound of electronics with extensively processed granular synthesis techniques advocated an imaginary scene—stepping on a pile of crystal glasses. The piece generated impressions of being on a cold icy island. The whole section changed its texture from extremely sparse to dense but with light sounds for clouds. The delicate registral progression of the piano from high to low back to high enhance the impression

of fragility of the crystal glass. This intensity created an environment related to white and light blue.

*Dark Matters* for audiovisuals (2015) was an experiment with an artist Katherine Guillen as a collaborative audio-visual work based on Cook's Multimedia Model in order to test the relationship between audio and visual with black. First, we came up with an idea for using black to create two parts, one with a complement, and the other with a contest based on the emotional impact of the black. To achieve a quality of tranquility, we went to the opposite state by combining disturbing electronic sound with bright white light for the duration. To achieve a savage quality, we matched the chaotic impression of society with noisy and loud electronic sound and densely layered images. These two parts combined to show elemental qualities and the opacity and scale of the forces acting on the matter of being.

*Flickering Light* for String quartet (2015) depicts an image of yellow candlelight in the darkness. A heavy bass line with double stops at the beginning of the piece integrates with held notes in violins and viola. The sound created with this layer sets an atmosphere with heavy texture to fit the darkness and it also creates the primary harmonic environment of the piece. Later the melody lines move as a character, yellow candlelight, so that the piece develops from homophonic to polyphonic texture as a yellow light penetrates the environment with uncertainty.

*Humanix* for dance and electronics (2014) is a collaborative piece with dancer and collaborator Casey Avaunt. The whole concert was named *Human Noises* to express the message of humans suffering under the control of societal authority. I chose to make *Humanix*, which came at the end of the concert to represent a human voice. Music is completely electronics with extensively controlled and restrained sound from the beginning when dancers also stand in restricted areas. To achieve the restraint, a MAX/MSP patch allowed sound parameters to be interactively controlled through the use of video motion tracking of dancers. I tried to express grayish blue with the sound of noise and distortion to match with the uniform color of all the performers (including me) as so-called prisoners of the society.

*In the Field: Deep Ocean* for flute, clarinet, violin, cello, percussion, and electronics (2014) was dedicated to the people who died at the tragic accident of the SeWol ship disaster in South Korea. This piece combined a programmatic element with color. The intense sound of noise reflected the sound of waves in the ocean. Because it was noisy, the sound of the sea provided an impression of gray-blue in dark tones as in *Humanix* rather than light blue. The intensity of the accident at the beginning was represented by rhythmic pulses added to the sound of the instrumental ensemble. The tranquility established from the sound and instruments brought us into the world of the ocean and to memorialize the people who died in the horrible accident.



*Intricate Organs I* for violin and electronics (2014) is dedicated to a famous Korean rocker who died due to the malfunction of organs during surgery. The sound of electronics depicts the sound of streams in the human body. Liquid and growling sounds are combinations of red and blue. Red is blood, but blue is coldness after death. The sound of a violin with rapidly oscillating notes (tremolo, etc.) melting into distorted electronics toward the end provides an impression of the shrill, cold state of blood.

*Intricate Organs II* for Viola and Electronics (2015) is a sequel to *Intricate Organs I*. I started this piece by having a color progression chart. To connect with the coldness of *Intricate Organs I*, I realized blue and silvery sound from both viola and electronics. The longing lines of both sounds intertwine each other irregularly. In the middle, I composed a moment of peacefulness and warmth with a viola solo that seemed more yellowish-white in color. The rhythmic parts in the middle of the piece created intensity in darker blue and black like contagious oil inside the body.

*Blue, Red, Green* for piano, electronics and dance (2016) is a collaboration with two choreographers, Casey Awaunt and Hyoin Jun for an installation environment featuring primary light colors—blue, red, and green, each of which has a separate section. Three of us formed the piece based on how each color impresses us. Blue is the calmest color and reminds us the ocean or water. We expressed water, the motion of waves and activities in the ocean. The music was silent and spacey within the sparse texture so as to create a low hue blue color like the sky. Electronics reinforced the ambient expression of

the piano. The Red movement was the most energetic and provocative section of the piece. The subjects in this section were battle, war, powerful energy and heart. The sound level of the music was the loudest and noise was a critical component to increase sound intensity. The ideas of innocence and rebirth imbued the green section. The dance movement expressed the process of a human's birth. The music repeats an ostinato pattern to suggest peace. This composition used emotional effects based on colors to manipulate space and time and demonstrated how common sense between collaborators could integrate puzzle pieces of dispersed impressions of color into a united piece.

### **III. Color as an Affective Controller**

#### **A. Methodology**

##### **1. Concept**

The color we see is somewhat substantial discerning objects and assessing circumstance. We perceive color with an objective suitable to ideas that are inherent. A carrot is orange, a lemon is yellow, and a plain blank sheet of paper is often white. The emotions that arise from the perception of color are subjective and cultural. Even though color produces emotional effects consistently, these effects are variable.

Art, itself, is subjective. Although people share similar biological elements (two eyes, two hands, and brain nerves), life experiences over time causes them to arrive at discrepant views.

Nietzsche mentioned that art is a spectator's view. An artist perceives his/her art as a spectator in the process of or after its creation. He felt that existence was filled with denials and lies and that it was necessary to create art in order to produce order and meaning.<sup>96</sup> Both Nietzsche and Schopenhauer considered life to be suffering, and they treated art as a means for us to live in lies for a specific moment to "conquer this reality, and this truth."<sup>97</sup>

Music that consoles audience members sometimes does so by suggesting changes to their emotional lives. People are capable of withdrawing from loneliness instantly by feeling connection with a mediator—an impression of interaction and compromise. The value of this effect of art and music is difficult to estimate in terms of society and culture.

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<sup>96</sup> Daniel Camm, *Nietzsche on Art and Life* (Oxford: Oxford University Press, 2014), 24.

<sup>97</sup> *Ibid.*, 27.

Art and music also do not necessarily provide solutions to problems. However, the audience manages to appreciate that the agony of their existence in the world is not unique. Art and music can work as a form of pain relief by removing audiences from their problems, and simplifying issues such as the emotional response to restrained values innate in a materialistic and/or capitalist society.

*What We See is What We Desire to See for Color and Instruments*, seeks to articulate the transcendental illustration of art with the compatible format of performance and lighting design. This musical composition with images uses color both to guide emotional impact and articulate form. In order to compose with the relationship between color and music, I conducted several experiments and came up with compelling parameters.

I combined impressionistic views realized dynamically (better for a virtual world) with descriptive colorization in a piece focusing on the juxtaposition of a primary macroscopic skeletal idea about life with a microscopic examination.

## **2. Overall Approach**

I set different parameters to connect visual components to musical ones. These parameters were temperature (freezing, cold, warm or hot), texture (sparse, dense, or moderate), speed (up, bottom, left, right, front, back), and lights. The temperature between color and sound is related to the location on each spectrum, with warmth and coldness between two media showing correlation. How many colors are placed onscreen, and how dense musical elements are layered at one time is texture (speed considers the rhythmic changes of both color and music). Emotional level and impact associated with

color map onto musical components.

Achromatic colors are crucial components of the piece because they are the colors that have a philosophical, but concurrently physiological relationship to the unknown world (due to their extremity). The color black correlates to darkness. Low frequencies, especially the ones in the sub-audio range convey invisibility in the dark. There are many segments where the color black or the images related to the implication of black pair with the low register of the instruments.

The fact that the mixture of every color results in black allows the color itself to carry more power over the others (even though the existence comes from the lack of physicality). Black owns the powers of supernatural and invisibility which threaten humans and cause them to be fearful. In the realm of darkness, we cannot perceive concrete things through physical eyes. Black blocks an essential function of the eye and, as a result, stimulates imagination. It creates an immeasurable black hole. Our limited vision and creativity can operate both positively and negatively. We tend to focus on adverse effects when situations are out of control. Unidentifiable environments create fear, darkness triggers negative thoughts and evil characters and witches from many narratives wear dark clothes. Black exists between two extremities in the speed of heartbeats and creates two extreme emotional states simultaneously: comfort and fear. Jun`ichirō Tanizaki mentions how it is comfortable to use a bathroom toilet in dim light so that one needs not see everything as it is.<sup>98</sup>

Sometimes blindness to existence causes comfort with ignorance. The darkness

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<sup>98</sup> Jun`ichirō Tanizaki, *In Praise of Shadows*, trans. Thomas J. Harper and Edward G. Seidensticker (London: Jonathan Cape, 1997), 13-15.

allows us to overlook insignificant things like germs under a desk or on the carpet. Black draws unlimited space. The infinite possibilities frighten us because they are not in our control. Conversely, unlimited space creates an environment of nothingness as we close our eyes by seeing nothing, and engenders a sense of tranquility by getting rid of distractions (meditation).

The four transitions paired with color black in the piece reflect both fears and comfort. Black 1, Black 2, Black 3, and Black 4 occur as transitions between the main movements. The character of linkages helps set a boundary as a transition or an interlude between central sections. Color shifts reflect distinct themes of movements. The transitions connect each movement through different subconscious mindsets and an identity established by the repetitive appearance of black mitigates the feeling of abnormality caused by interruptions and pauses.

*Transition Black 1. Dark Clouds* transitions from white to black. The color of clouds is a compromise between two extremities. Dark clouds appear to disclose the earth. This is a transition from the world above the human to the human world. The clouds stay white when close to the sky (universe). But when they reach the earth, they echoed the dirt. The dirt infiltrates the clouds. This darkness corresponds to the area where the human lives.

The color black in *Transition Black 2. Nightmare/Destruction* symbolizes nighttime and human fears the darkness and invisibility. With trouble seeing things, humans invent solutions to conquer fears and create nightlife (reconstruct the natural environment through artificiality and technology).

*Transition Black 3. Stage of Fear* is a transition between *III. Industrial* and *IV. Battle* to illustrate the disastrous attempt of the human to recreate a virtual world. The world, built on a superficial foundation lacking fundamentals, collapses into the underground. Industrial and technological development has enhanced the quality of life, but the lack of limitations thrust the human into another space of loss and confinement. This impels the human to find better solutions.

This transition *Black 4. Sinking and Black Hole* is a symbol of the destruction of the conflicts between humanity and mechanism. This transition embraces black's two extremities. First, it is about collapsing. When everything breaks and explodes, chaos ensues, but the situation evolves into serenity after all conflicts vanish and everything sinks down into a black hole. The black color at the end of this transition expresses the calmest state in the piece and reinforces the transitional material to the next section.

One distinctive technique used in the piece is a glissando that connects between two adjacent notes. Distinctive notes created from the equal temperament in Western music are not enough to represent all existing vibrations in the air. Futurist considered this a 'discontinuous' system and instead, thought in terms of "enharmonic gradation," which results in a continuous tone.<sup>99</sup> The glissando technique functions to include all particles and elements in the universe and all the wavelengths and waveforms in color and music.

Boccioni mentions that 'the eye of man will perceive colors like feeling in

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<sup>99</sup> Luciano Chessa, *Luigi Russolo, Futurist: Noise, Visual Arts, and the Occult* (California: University of California press, 2012), 142-147.

themselves. Multiple colors will have no need of forms to be understood.’<sup>100</sup> The music in *What We See is What We Desire to See* follows the parameters of color in the experiment previously described. My perspective concentrates on impressions of each color that are affective. Theosophists thought:

“Many people are aware that sound is always associated with color—that when, for example, a musical note is sounded, a flash of color corresponding to it may be seen by those whose finer senses are already to some extent developed.”<sup>101</sup>

When I hear sound in a high frequency area (short wavelength) I feel lighter than when I hear the sound in a low frequency area (long wavelength). When I see colors with short wavelengths, I feel more depth than when I see colors with long wavelengths, (opposite to the impact when I hear sound).

The colors white, blue, red, yellow, orange, magenta, and purple are the central expressive apparati in controlling music in the main sections. Different energy levels in their corresponding frequency zones connect emotional impacts between music and color. As red is hot and intense with high energy, I matched it with rhythmic intensity. Since blue is cold and lower in energy than red, I matched it with a static, jarring sound. The lightness of color matches with a sparse texture especially in the high register, while darkness matches with a dense texture in the low register. Darkness suggests a heavy sound, while brightness suggests a physically lighter sound. Darkness drags the materials into the ground, while brightness lifts things up. I found bright yellow to be warm because of its relationship to the sun and paired it with warm instruments. Sounds with

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<sup>100</sup> Ibid., 28.

<sup>101</sup> Baker, “*Prometheus* and the Quest for Color-Music: The World Premiere of Scriabin’s *Poem of Fire* with Lights, New York, March 20, 1915.” *Music and Modern Art*, 70.



high frequencies match cold colors, such as white and blue in the first section. Red with a longer wavelength produces more energy and a warmer temperature compared to blue. It reminds me of blood, the basic element responsible for moving the human. Thus red is the thematic color of *IV. Battle*.

Pitch information is drawn from empirical, and aesthetic adaptation. Scales operate the same way.<sup>102</sup> Just as Scriabin made color organs to map a color to each note and project the colors on the white screen<sup>103</sup> each movement is mapped with a certain color with suggested surroundings enhanced by projection images. The music composition results from the whole production encompassing the elements of lighting and projection as a total entity of color application rather than a mere mapping element.

### **3. Tools and Setup**

#### **a. Video**

##### **i. Creation**

A total of nine videos depict the story with color and images (five main movements in distinctive colors with four transitions in black). The color of the video is compatible with the other critical elements of the piece: lighting, music and the story. These videos were made in iMovie 10.0.5 (Apple Inc) and can play from any playback program.

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<sup>102</sup> Hull, 102.

<sup>103</sup> Hull, 224.

## **ii. Projection**

Color representation is critical in the realization of the piece. The shape feature with full colors in Microsoft Word for Mac 2011 ver. 14.4.6 and Microsoft PowerPoint 14.4.6 helped create this environment. Drawings and pictures are primary sources for the projection and accompanying color to fit an impressionistic and contemplative set of images representing the fundamental philosophical idea underlying each section.

## **b. Stage Lighting**

The lighting on the stage performs a critical role in the completion of the musical composition and the storytelling. Each instrumentalist (and a conductor) wears white clothes to help serve as an empty canvas for stage lighting. Gillette suggests color manipulation in multiple ways: distribution, direction, shape and size of the area, quality (clarity, diffusion), character (texture), intensity (level of brightness), and movement.<sup>104</sup> *What We See is What We Desire to See for Color and Instruments* emphasizes direction, size of the area, quality, and intensity (as saturation).

## **c. Electronic Sound**

### **i. Live Processing**

Max/Msp 7.4 controls playback/recording system in the piece. It takes microphone inputs from *II. Human* and processes it for playback in *V. After Battle*. It also process the piano sound into distortion. The sound of the sine wave in the *I. Universe to*

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<sup>104</sup> Gillette, *Designing with Light: An Introduction to Stage Lighting*, 140.

*Sky* and the sound of the square wave in *III. Industrial* are from a keyboard. The sound cuing operator is permitted to use any settings or plug-ins to produce the sound.

## **ii. Pre-recorded Sound**

In *III. Industrial*, the keyboard sound (square wave) played live is also pre-recorded permitting it to be played back at the end of the section. The other pre-recorded sounds (extended bell sounds) in *IV. Battle* were prototyped in Ableton Live suite.

## **d. Music**

### **i. Set-up**

The set-up of instruments on stage is as indicated in the score.

### **ii. Computer Notation**

The musical notation is the result of editing in the notation program, Finale 2014, and includes performance notes with instructions for electronics, projections and lighting and charts for suggested stage and electronics setup. This includes the images for projection and instructions for lighting and electronics operators. The score notates pitches in electronics as well as the instructions for the operator.

## **B. Stories of Each Movement with Projection, Lighting and Music**

*What We See is What We Desire to See* is written for color and instruments, but connected to stories implicit in projected images. It has five main movements in which different colors gestate stories and music. Four transitions in black are intermediary

portrayals of each movement.

The visual world consists of colors. We can see an object because its reflection is perceived by the sense of the eyes. When we hear music, we are invited to another world through imagination or a virtual reality. Organs in the body travel inside and each of them has distinct colors. Everything we perceive in nature and the universe has color. Color consists of wavelengths and, depending upon the objects or lighting, we perceive differences. Those wavelengths with various energies convey sound and color. When color becomes an inspiration for musical composition and narrative stories associated with it suggest musical progression in form and organization as visual media and influence musical writing. How humans live can be seen as reflective of how the universe works around them. The real world cannot be all lights or no light, so that white and black colors in the piece convey surrealistic and abstract meanings to the audience. The mixture of white and black is gray and the color gray is a new identity-machine, technology and metal. Yellow is the color of the sun. Other colors result from the effect of the sunlight, other forms of lighting, or artificial technology. Red is blood inside humans. The concept created by color as its controlling function and three main media—projection, lighting and music comply with an abstract and collective story.

### **1. Movement I. Universe to Sky**

The section's main color is white to match with the purest stage in the universe. The color white seems universal from the fact that white is the combination of all lights. Futurists consider white light as ‘the primary energy that unites opposite, complementary

colors.’<sup>105</sup> The universe is the source of every feature on earth. The section with white is a level above human power. The white clouds are at a height above where humans exist. Humans may look at the high pure white clouds with the admiration. The color white in this section results in radiations of the quality of the supernatural unattainability in the universe and the sky and perhaps the original cause of human desire.

The projection in *I. Universe to Sky* is white and light blue with atmospheric pictures of clouds in the sky as they moving through the boundaries between universe and earth. To express the subtlety of the music, the images of clouds transition slowly from one to the other with achromatic colors: white, gray and black. This section represents a world that is out of humanity’s reach through natural physicality without assistance. The pure state of the clouds without human contact is unperturbed. When clouds travel close to the world of humans, they clouds began to become contaminated.

The light (Light Tough Rolux #115) layered with the video in whitish gray fills the air with the illusionary texture in the performance space. Then lighting gradually adds Cool Blue #66 at Rehearsal B where mountains appear with upward motion. The sine waveform merges with woodwind sounds as a developing electric machine builds a symbiotic relationship with humans. The color blue foments the emotional qualities of cold and calm, compatible with the quality of machines without blood. The light turns to Light Gray #97 as an initiation of the shift from universe level to ground level. Then Light Gray #97 turns into a darker color (Medium Gray #98) as the clouds move faster downward toward the earth.

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<sup>105</sup> Chessa, *Luigi Russolo, Futurist: Noise, Visual Arts, and Occult*, 38.

As the section is a figurative stage of the purest state in-universe, electronics theatricalize a sound equivalent to the acoustic instruments (flute, clarinet, and strings). The register is high, but the lighting alternates between darkness and brightness.

The section blends only sine waveforms, the sinusoids representing a literal statement about the root of universe and sounds. The sine waveforms are primal ingredient of other sounds.<sup>106</sup> We manipulate sine waveforms to attain desired sounds. The sound of a flute or clarinet consists of few sine waveforms that vibrate at a regular pace. The numbers of partials above the fundamental frequency in the high register are a lot fewer than those generated from the sound in the low register.

Analytically all sounds maybe seen to be constructable through sine waveforms. The sound itself corresponds to the world. This phenomenon connects to the metaphoric world structured in *I. Universe to Sky* as a pure state in the universe antecedent to human involvement.

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<sup>106</sup> Miller Puckette, *The Theory and Technique of Electronic music* (NJ: World Scientific, 2007), 1.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is arranged in a system with 13 staves. The instruments are: Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric Percussion (Elec.), Lights, Projection (Proj.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score begins at measure 18. The Flute and B♭ Clarinet parts feature melodic lines with various dynamics including *pp* and *n. pp*. The Electric Percussion part has a dynamic range from *pp* to *p*. The Lights and Projection parts are marked with time signatures of 5/4, 4/4, and 3/4. The Violin I and II parts have dynamics of *pp* and *p*. The Viola and Violoncello parts have dynamics of *p* and *pp*. The Piano part is mostly silent. The Percussion parts are also mostly silent.

Figure 8. Musical Example: *I. Universe to Sky* mm. 18-24

Instrumental sound and pure sine combined together to create artificial and

perfect world in the sky without human aspects. Each parameter is paired to musical characteristics. The section's temperature is cold. The sound of sine waves and the electronically simulated sound from the flute and clarinet both play in the high register. The movement within musical passages is smooth.

Figure 9. Table of Parameter Application for Movement I. *Universe to Sky*

Temperature	COLD: The sound of sine waves and the electronically simulated sound from the flute and clarinet play in the high register.
Light	Extreme brightness-surrealistic light blue (short wave forms with low energy level-low in hue)
Movement	Soft
Sound	Extremely purified sound
Speed	Slow
Texture	Low



WHAT WE SEE IS WHAT WE DESIRE TO SEE

D  $\downarrow = 80$

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec.

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

Stays in white but tinted "Gray" (Light Gray #97) dissolves to Medium Gray #98

clouds on earth

Figure 10. Musical Example: *I. Universe to Sky* mm. 40-47

From measure 44, the flute, clarinet, and strings move at a faster tempo and pace.

The pace of the section suggests intense forward motion into the sky much as a balloon ascends. This movement connects the musical energy to the pace of the movement for the

first black section.

### **1-1. Transition Black 1. Dark Clouds**

This is a transition and the first black section of the piece. The expanded images of clouds are compatible with the sounds of piano distortion in that both are intentional misrepresentations of the source. The clouds become increasingly dark over time and later the sky is overcast and everything turns into darker blue which suggests a frightening environment to the human.

The light slowly transitions to Medium Gray #98 and initiates the first blackout since the start of the piece. The environmental color in the black sections is dependent solely on the color from the projection. Only performers receive stage light as they are stars only lit in the darkness (universe). Each black section works as a transition between central movements.

The light slowly adds purple (Baldassari Blue #381) with substantial saturation to the stage as clouds are closer to the earth. The dark color has meaning in relation to the human's perspective, night. After this, the light creates a transition from dark purple to red at Rehearsal G. Light slightly adds Medium Gray #98 and dissolves the purple and gray into CalColor 60 Red #4660 to create a color related to the earth.

Electronics in this section integrate with the metaphoric depiction that the clouds are affected by the noise in the air. This results in the sound of grunge noises and low rumbles. The slow ambulatory rhythm in the piano is the downward movement of clouds, so the sound of the piano is contained by the distortion as an effect from the electronics disturbs the acoustic sounds in the piano.

This section focused on the human's life starting with the color of the night sky. The rhythm was static and bass driven. Blackness conveyed sinking through low frequencies. Low frequencies which connected to images of underground material through a theme and a mesmerizing tremolo drone. Rumbles in the piano and other instruments (distorted) signify with darker colors; black, dark navy. This section introduces the sound of percussion with the bass drum. The lowness of the sounds and their repetitive patterns provide calm while thin woodwind instruments and strings signify anxiety.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**E** [TRANSITION BLACK1. DARK CLOUDS]

Fl. *non espress.* *p*

B♭ Cl. *airtone* *non espress.* *p* ord.

Bsn. *non espress.* *ff* *p* *pp* *p*

Perc. 1

Perc. 2

st Elec. **E2** **Process 1-distortion**  
take piano sound from mic 6

st Lights **L5** Only performers receive stage light  
(murky as possible) BLACK  
LIGHTS SHIFT TO BLACK

st Proj. dark clouds  
fluffy vision

Pno. *p* *pp*

Vln. I

Vln. II

Vla. *pp* *mp* *pp* *pp*

Vc. *mp* *p* *mp* *pp*

C.B. *p* *pp* *mp* *p* *mf* *p* *mf* *pp* *mp*

Figure 11. Musical Example: *Transition Black 1. Dark Clouds*,  
mm. 84-90.

Sections associated with the color black (expressed as darkness on the stage) are interspersed throughout the whole composition. Black sections employ a relatively low

register, expressing an unseen and mysterious atmosphere and infrared, which has the longest waveform and highest energy and is invisible. Glissandi between nearly adjacent notes played by instruments which can produce continuous frequencies (woodwinds, timpani, and strings) suggest the full spectrum. After the initial projections, the audience's perspective moves from the universe to the earth while clouds mixed with smog/fog move slowly. The tempo of the piano is slow and the rhythm is regular and repetitive as dark clouds oscillate through the sky. The slow glissandi and subtle changes in dynamics complement this slow movement of clouds.

## **2. Movement II. Human**

This section is closely related to daily experience caused by the amount and angle of light we get from the sun. The human creates life patterns governed by the cycle of solar movement. It starts with the darkest blue that connects from the previous section, *Black 1. Dark Clouds* generate an impression of the sky before dawn. The drawings of human faces without eyes, nose, or mouth resist the interpretation of facial expressions. It is a state of pre-awakening, namely an unconscious and imperceivable time. With daybreak, the faces start to acquire eyes and mouths, and the whole screen adds a tint of magenta to suggest sunrise. The next segment is yellow as daylight begins with numerous activities. This segment includes group pictures of the human body with motions.

The darker yellow reveals the start of another time of the day (about four pm). Until daylight, the pictures depicted the human's life waking up and moving around the patterns made by the sun. Four pm is a time close to the end of human daily duty to be done in a day. Some daydreams slowly rise as the sun prepares to descend. Dreams with

fantasies are invisible, so the words and numbers of particular times and the word, “daydream” appears to confirm the approaching sunset. The word ascends and merges with the color orange, which is abnormal for the sky at this time of the day. A drawing of houses that the human goes to after daily activities emerges and the normal color of the sky, blue, returns.

Dark blue as night appears when the bassoon plays the human theme alone. This color comes with the clouds in the sky to portray the phenomenon without any human involvement in nature. The sound of the viola shifts from this state and the lullaby section starts. The static movements of starry images are analogous to the human's mind at night when they start to fall asleep before dreaming. It is a pure state of being. The color of this sky turns to dark purple which is perhaps one of the most frighten colors for humans.

The lighting of the Human section reflects the movement of the sun in time. It is reasonable to presume that the lifestyles and values of the human result from the influences of light generated from the human's relationship to the sun. The light follows the time of the day from morning to night. The varieties of light create distinctive activities depending on this time, and humans are often more active during daylight.

Light red (CalColor 60 Red #4660) slowly dissolves into “Magenta1” (CalColor 30 Magenta #4730) as a light for late dawn, which is from 4:00 am at the rehearsal H when the section starts. Then “Magenta 1” (CalColor 20 Magenta #4730) becomes “Magenta 2” (CalColor 30 Pink #4830). After that, “Yellow” (No Color Straw #06) is slightly added as a sunbeam to emulate the time of 6:00 am when the sun begins to rise. “Magenta2” (CalColor 30 Pink #4830) slowly dissolves into “Bright Yellow” (CalColor

90 Yellow #4590) as daylight for the transition from morning to the time near noon. Then only “Bright Yellow” (CalColor 90 Yellow #4590) dissolves into “Pale Yellow” (#07) to have a natural the stage light as daylight for afternoon light.

“Pale Yellow” (#07) becomes “Darker Yellow” (Straw Tint #13 or Medium Straw #14) as with “Brown” to generate darker light around 4 pm when is the initial stage that the sunlight starts to dim. “Darker Yellow” layers with “Light Blue” (Cool Blue #66) as the sunlight in the sky increases saturations in the sky.

As the piece reaches sunset, the light adds “Red 2” (Pale Rose Pink #37) and later “Red 3” (Medium Salmon Pink #32) and slowly alters the two reds to create an effect of the twilight. The complete transition occurs with the change of light to “Purple2” (Light Rose Purple #47) as the end of twilight. Later it dissolves into darker “Purple 3” (Indigo #59). At the time of the day when the human finally finds peace at night, the light atmospherically stays in “Purple3” (Indigo #59) and eventually fades out at the end of the piece.

Humans are an extant part of real nature and seek answers to questions of value and existence. They might be able to find values, but they do not need to prove other existences or share sources of the place, earth, much less the universe. They conclude their position in the world as themselves, but do not necessarily satisfy their desires or expectations.

The human section in this piece limits the relationship of the human to that of nature. This section excludes modernity and rather focuses more on the human activities and their values in natural environment. Electronics is a medium to enhance the

possibility of expression and the creation of sound and music. This medium, with devices that use electrical circuits and power, is the same tool of electric light bulbs to overcome darkness that occurs in nature at night or in other dark spaces such as caves or tunnels. To depict only the human aspect, this section uses acoustic instruments.

The section has colors following the number of colors the human experience during a day. This section uses more recognizable melody lines to suggest humanity. The music follows the activity levels the many numbers of humans do at different times of the day. The night section has low activity level, so it has sparse texture and slow rhythm, while the day section has a more vibrant rhythm with more complex texture. Violins or viola presents the human theme in order to emphasize characteristic human aspect.

Figure 12. Table: Parameter Application for *II. Human*

Temperature	Warm: no electronics
Light	Dark blue/purple; magenta in low hue; normal daylight low hue in yellow; orange
Sound	Ordinary, not noisy, acoustic instruments with melodies and tonal harmonies
Speed	Slow in darkness, slower in the darker yellow than the bright yellow
Texture	Mid



WHAT WE SEE IS WHAT WE DESIRE TO SEE

**H** [II. HUMAN]  
♩=66 (4 am)

Fl.  
B♭ Cl.  
Bsn.  
Perc. 1  
Perc. 2  
Elec.  
Lights  
Proj.  
Pno.  
Vln. I  
Vln. II  
Vla.  
Vc.  
C.B.

Stage of Dawn-Magenta  
"Red" (CalColor 60 Red #4660) slowly dissolves into "Magenta1" (CalColor 30 Magenta #4730) as a light for late dawn

video II. Human

ppp < p > ppp

Timp

f

Figure 13. Musical Example: *II. Human*, Beginning, mm. 121 -130

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE". It features a multi-measure rest of 131 measures, divided into three systems of 44, 44, and 44 measures. A section marker "I" is placed above the first measure of each system, with "(6am)" written below it. The instruments and their parts are:

- Fl.**: Flute, starting with a *pp* dynamic.
- Bs. Cl.**: Bass Clarinet, starting with a *pp* dynamic.
- Bsn.**: Bassoon, starting with a *pp* dynamic.
- Perc. 1**: Percussion 1, starting with a *pp* dynamic. Includes a note: "motor on vibe or brushes".
- Perc. 2**: Percussion 2, starting with a *p* dynamic.
- Elec.**: Electric guitar, with a *pp* dynamic.
- Lights**: Lighting cues: "Magenta 1" (CalColor 20 Magenta #4730) becomes "Magenta 2" (CalColor 30 Pink #4830) and "Yellow" (No Color Straw #06) is slightly added as a sunbeam.
- Proj.**: Projection, with a *pp* dynamic.
- Pno.**: Piano, starting with a *pp* dynamic.
- Vln. I**: Violin I, starting with a *p* dynamic.
- Vln. II**: Violin II, starting with a *pp* dynamic.
- Vla.**: Viola, starting with a *pp* dynamic.
- Vc.**: Violoncello, starting with a *pp* dynamic.
- C.B.**: Contrabass, starting with a *pp* dynamic.

This is the exposition of *II. Human* and contains the human theme. Instruments minimize the introduction of the theme and end by playing only a portion of it. The energy in the low register with chunks of the piano sound of *Transition I: Dark Clouds* are slowly withdrawn. The contrabass starts with a descending perfect fifth, which the

flute receives and continues in descending ornamentation. Later, the bassoon takes over this short passage. A timpani roll suggests an early morning sunrise as the human starts breathing after awakening. The theme continues in violin II and viola, after which flute and clarinet receive it again. Finally, violin II plays the whole human theme. The descending perfect fifth suggests gravity which the human grasps for stability. This opening section occurs before dawn when everyone is still sleeping, but it is close to the moment of the initial awakening of the human to start the day. The dawn of a new day is also associated with the state of humans before modern technology interrupts the human's lifestyles and ethics.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

156

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec.

Lights

Proj.

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

*mf mp p pp p mp*

*mp mf p*

*p > mf*

*mf f*

*mf*

Figure 14. Musical Example: *II. Human*, Short Transition to Daylight,  
mm.156-171

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**J** (transition to daylight)

Fl. *f*

B♭ Cl.

Bsn.

Perc. 1 *mf* *pp* *mf* *p* *mp* *pp*

Perc. 2

Elec.

Lights **L10** "Magenta2" (CalColor 30 Pink #4830) slowly dissolves into "Bright Yellow" (CalColor 90 Yellow #4590) as daylight

Proj.

Pno.

Vln. I *f*

Vln. II *mf* *p* *mp* *pp*

Vla. *mp* *f* *pp* *mf* *p* *mp* *pp*

Vc. *f* *pp* *p* *pp* *n.*

C.B. *mf*

This little transition signifies the moment when the human turns into the active mode from dissimulation. The vibraphone with tremolo indicates sunrise. It then turns

into a bird theme to hint that daylight is soon to come, while strings play the human theme as the human wakes up. The strings later join the bird theme as an echo of the vibraphone sound.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

[K] (daylight 11:00am/noon)  
♩=60

Fl. *mp*

B♭ Cl. *mp*

Bsn.

Perc. 1 *mf* *pp*

Perc. 2

Elec.

Lights (L1)

Proj.

Pno.

Vln. I *molto vib.* *p* *pizz.*

Vln. II *p* *pizz.*

Vla. *p* *mf*

Vc. *p* *pp* *mf*

C.B. *sf* *f* *ff*

Figure 15. Musical Example: *II. Human*, Daylight 11:00/noon a, mm. 172-174

This section is the beginning of daylight when everything is the brightest. Everything is clear, and it is the time that the human interacts the most with others: people, tools, and the environment, both natural and industrial. The section starts by extending the bird theme from the morning, suggesting activity and vividness. Flute and clarinet suggest the busiest time of the day with short repetitive patterns including the shortest note value in the piece, the 32<sup>nd</sup> note. Violins produce pizzicato rhythmic punches to enhance the effervescent moments of the day as the human and animals jump in the natural environment and many cars cross each other on multi-layered freeways.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score consists of the following parts and markings:

- Fl.**: Starts at measure 195 with a *p* dynamic.
- B♭ Cl.**: Starts at measure 195 with a *p* dynamic.
- Bsn.**: Starts at measure 195 with a *mp* dynamic, includes the instruction "breathe as necessary". Dynamics range from *mp* to *mf* and *mp*.
- Perc. 1 & 2**: Silent throughout the section.
- Elec.**: Silent throughout the section.
- Lights**: Silent throughout the section.
- Proj.**: Silent throughout the section.
- Pno.**: Starts at measure 192 with a *mf* dynamic, dynamics range from *mf* to *mp*.
- Vln. I & II**: Starts at measure 192 with a *p* dynamic, includes the instruction "arco, molto vib.". Vln. II includes "to pont." and "ord".
- Vla.**: Starts at measure 192 with a *p* dynamic, includes the instruction "arco, molto vib.". Includes "to pont." and "ord".
- Vc.**: Starts at measure 192 with a *p* dynamic, includes the instruction "arco, molto vib.". Includes "to pont." and "ord".
- C.B.**: Starts at measure 192 with a *mp* dynamic, dynamics range from *mp* to *mf* and *mp*.

Figure 16. Musical Example: *II. Human*, Daylight 11:00/noon b, mm. 192-195

This section continues the ostinato from the previous daylight section, but it introduces the specific torpid thematic lines with glissandi in violins and later in viola. This lethargic theme portrays the phenomenon that even though the human spends their



most vibrant time in a day under daylight, they still seek to respite from constant activity.

The piano continues the ostinato rhythmic figures in staccato with a bassoon that is reminiscent of the previous section. The whole texture of the section is sparser than before and after.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Figure 17. Musical Example: *II. Human*, Daylight 11:00/noon c,

mm. 196-197

The rising figures hinted at the previous section are finally distributed to the whole orchestra when the flute and clarinet pick them up and develop them into a new primary ostinato figure which alternates with the bird theme of the daylight section. The original ostinato rhythm from the daylight section continues in the bassoon and contrabass with interjections by the timpani while the piano latches on to the newly introduced rising ostinato patterns in flute and clarinet. Some remnants of the lethargic state continue in the violins and viola but soon they adopted the same rising ostinato figures as the flute and clarinet.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

203 **M** (4pm)

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec

Lights

Proj

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

low tom on the edge

Time

non espress.

time image

"Pale Yellow" (#07) becomes "Darker Yellow"  
(Straw Tint #13 or Medium Straw #14) as with "Brown"

pizz.

non espress.

pizz.

non espress.

pizz.

non espress.

pizz.

non espress.

pizz.

non espress.

Figure 18. Musical Example: *II. Human*, 4-6 pm, mm. 203-215

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE", starting at measure 210. The score includes parts for Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec), Lights, Projection (Proj), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Via.), Violoncello (Vc.), and Contrabass (C.B.). The score features various dynamics such as *p*, *f*, *pp*, *mp*, and *mf*, along with articulation marks like accents and slurs.

II. *Human* progresses from dawn to dusk as the earth spins facing the sun. The light from the sun affects our vision as we look at the environment and surrounding objects. This figure is a time when the sun descends between 4-6pm (sunset). The human

is a social animal. So as in the beginning section, where the human theme is dispersed between different instruments to become a whole, here pizzicati are spread among different instruments, to create a complete rhythmic figure. Woodwinds mimic percussion by repeating the rhythm. This repetitive motion relates to a lethargic moment of the day when the human daydreams under the sun, which reflects colors that fantastically transcend the normalcy of a blue sky (magenta, orange, etc.).

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score for 'WHAT WE SEE IS WHAT WE DESIRE TO SEE' from 'Human, Before Sunset' (mm. 227-230) features the following instruments and parts:

- Fl.:** Flute part with dynamics *p* and *fp*.
- B♭ Cl.:** Bass Clarinet part with dynamics *f*, *mp*, and *pp*.
- Bsn.:** Bassoon part.
- Perc. 1 & 2:** Percussion parts.
- Elec.:** Electric guitar part.
- Lights & Proj.:** Lights and Projection parts.
- Pno.:** Piano part with dynamics *mp* and *pp*.
- Vln. I & II:** Violin I and II parts with dynamics *pp* and *mp*.
- Vla.:** Viola part.
- Vc. & C.B.:** Violoncello and Contrabass parts with dynamics *pp* and *mp*.

Figure 19. Musical Example: *II. Human*, Before Sunset, mm. 227-230

This section continues from 4 pm to sunset.. When we reach sunset, all the daydreams the human experiences vaporize in the sky as the sun descends and creates a

fantasy color. The distributed pizzicato rhythm continues throughout, then stops and turns into an ascending gesture with other parts. Woodblocks finally emphasize the repetition of individual notes, which suggest water drops in a virtual garden. Vibraphone intensifies the atmosphere of the daydream. Later, all instruments move in unison by ascending and repeating the action. Timpani increase the positive emotional energy, which is received by Violin I, which introduces the daydream theme.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score consists of five staves. The top staff is Flute (Fl.), the second is Bass Clarinet (B♭ Cl.), the third is Bassoon (Bsn.), the fourth is Percussion 1 (Perc. 1), and the fifth is Percussion 2 (Perc. 2). Measure 244 is marked with a circled 'Q' and '(night)'. The Flute part has a 'blow' instruction. The Bassoon part has a 'sole' instruction. Percussion 1 has 'motor on' and 'motor off' instructions. Dynamic markings include *mp*, *p*, and *pp*. Measure 253 is marked with a circled 'R' and '(Lullaby)'. Percussion 2 has a 'Timp' instruction and a dynamic marking of *p*.

Figure 20. Musical Example: *II. Human, Night*, mm. 244-252

This section is the first time that one instrument plays the human theme with its entirety. In contrast to the previous twilight section with exotic timbres and harmonies, the night section generates a direct and straightforward character with the bassoon. Glissandi include all frequencies between notes and portray human activities that the audience cannot directly see but can only imagine. As the night section contains limited lighting, other instruments, flute, clarinet, violin I, and timpani, occasionally emerge, but only partially.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is arranged in a vertical system with the following parts from top to bottom: Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric guitar (Elec.), Lights, Projection (Proj.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.).

The score begins at measure 262. The Flute and B♭ Clarinet parts have a dynamic marking of *p* starting in measure 265. The Piano part features a complex texture with arpeggiated chords and moving lines in both hands. The Violin I and II parts have dynamic markings of *pp*, *p*, *mp*, *pp*, and *mp* across the measures. The Viola and Violoncello parts have dynamic markings of *p* and *pp* in the later measures. The Percussion parts are mostly silent, with some light activity in measure 269. The Electric guitar, Lights, and Projection parts are also silent throughout the passage.

Figure 21. Musical Example: II. Human, Lullaby, mm. 262-269

The short lullaby section is the most peaceful in the piece. It is the time of day when the human is about to fall asleep without any conscious or unconscious worries about their reality. The piano continuously repeats the same pattern in 4/4 as the violins move between half notes in a steady motion without any interruption. Descending glissandi in the violins show the action of the human falling asleep comfortably. The pattern in the piano is static. Later, ascending piano motion and rising glissandi in the strings alternate downward string glissandi as the human breathes regularly in their most comfortable state.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

FL. *p* *p*

B♭ Cl. *n.* *p* *mf*

Bsn. *mf*

Perc. 1

Perc. 2

Elec.  $\frac{4}{4}$

Lights (L18) atmospherically stays in "Purple3" (Indigo #59) pin light on the Projection  $\frac{4}{4}$

Proj.  $\frac{4}{4}$

Pno.

Vln. I *p* *mf* *p*

Vln. II *p* *p*

Vla. *p* *pp*

Vc. *mf* *p*

C.B. *mf* *p*

Figure 22. Musical Example: II. Human, Final Section, mm. 287-302

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Musical score for the section "WHAT WE SEE IS WHAT WE DESIRE TO SEE". The score is arranged in a vertical system with the following parts from top to bottom: Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec.), Lights, Projection (Proj.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (C.B.). The score begins at measure 295. The Flute part is mostly silent. The B♭ Clarinet part features a triplet of eighth notes followed by a half note, marked *p*. The Bassoon part has an accent over a half note, marked *>p*. Percussion 1 and 2 are silent. The Electric part has a half note chord marked *p*. Lights and Projection are silent. The Piano part is silent. Violin I and II have half notes marked *p*. The Viola part has a melodic line starting with a half note marked *p*, then moving to a more active line marked *mf* with the instruction *solo. molto vib.*. The Violoncello part has a melodic line starting with a half note marked *mf*, then moving to a more active line marked *ff* and *p*. The Contrabass part has a melodic line starting with a half note marked *pp p*.

This section is the last part of *II. Human* and the last moment of the human at peace before things turn chaotic. It is also a prelude to the next transition. The ascending

4th throughout this section complements the descending 5th of the human theme. It means that the lifestyle and values of the human will start to face changes at the next level and invites confusion that leads to the human's nightmare and destruction.

### **2-1. Transition Black 2. Nightmare/Destruction**

The second black transition contains the darkest color and tones in the piece. The human's fear comes from a limitation of their abilities in relationship to the surrounding environment. The moon is in the sky to light nature just as during the day. Nevertheless, the darkness caused by the absence of sunlight imbues vulnerability the human faces before nature. This fearful mindset changes the color of the moon into black and nature into darker hues. The human resents their inability to see the world outside. The fear provokes the destruction and it appears to be a nightmare. This dark moon and forest fill with the image of ghosts not discernable to humans.

The second transition *Black 2. Nightmare/Destruction* is the time people feel most scared. The color that produces the most anxiety is dark navy blue.<sup>107</sup> "Dark blue" (Green Blue #77) becomes nearly "Black3" in creating fearful environment. The light slowly adds Indigo #59 and sparsely golden colors to enhance the effect of the night sky. This chord driven section has clusters and rhythmic variation in the low register to complement with darkness of the lighting.

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<sup>107</sup> Palmer, *The Lighting Art: The Aesthetics of Stage Lighting Design*, 103.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score for 'WHAT WE SEE IS WHAT WE DESIRE TO SEE' (mm. 311-312) features the following instruments and parts:

- Fl.:** Flute, rests in both measures.
- B♭ Cl.:** B♭ Clarinet, rests in both measures.
- Bsn.:** Bassoon, rests in both measures.
- Perc. 1:** Percussion 1, playing a rhythmic pattern of eighth notes in measure 311, then rests in measure 312.
- Perc. 2:** Percussion 2, playing a rhythmic pattern of eighth notes in measure 311, then rests in measure 312. Includes a 'Timp' (Tympani) part.
- Elec:** Electric Guitar, playing a rhythmic pattern of eighth notes in measure 311, then rests in measure 312. Dynamics include *ff* and *fp*.
- Lights:** Lights, rests in both measures.
- Proj:** Projection, rests in both measures.
- Pno.:** Piano, playing a dense, rhythmic pattern of eighth notes in measure 311, then rests in measure 312.
- Vln. I:** Violin I, rests in both measures.
- Vln. II:** Violin II, playing a sustained chord in measure 311, then rests in measure 312. Dynamics include *poco*.
- Vla.:** Viola, rests in both measures.
- Vc.:** Violoncello, rests in both measures.
- C.B.:** Contrabass, playing a sustained chord in measure 311, then rests in measure 312. Dynamics include *poco*.

Figure 23. Musical Example: *Transition Black 2. Nightmare/Destruction*, mm. 311-312

Though the human seems at peace at night, the night also leads to a new reality at a subconscious level. The human continuously worries about the next day. Throughout

history, the need to survive has changed humans' outer appearances and the tools they use to adapt. The perpetual desire to survive and overcome the limitations caused by nature in the human's worried mind creates a nightmare that destroys their peaceful state. To overcome these limitations and thrive in a better place, the human creates tools in the form of technology. This section is a transition from the human to the industrial, a period late in history where the human tries to find solutions by incorporating imperfect technology. This transition section depicts the deconstruction of the human being's pure state, ignorant of outer worries.

As the first black section, the piano is in the low register and is condensed to intensify the darkness. As infrared has the longest waveform and the most energy, and we cannot see it, the chords in the piano are not recognizable because they clash with each other. The low notes on the piano create high energy. This section starts with rhythmic intensity created by the piano and percussion, then continues with the fluidity of the flute, clarinet and violins which interrupt the rhythmic pulse as the piece depicts the destruction of the pure state of human society and the introduction of a solution in the form of "industrial" technology.

By separating the human section and the industrial section, the former depicts humanity without the interruption of advanced technology while the latter portrays the altered society resulting from the human's desire to find solutions to overcome the limit.

### **3. Movement III. Industrial**

The video of this section uses the technique of dichotomy. The section starts with achromatic colors: white, gray, and black to exclude the most humanistic nature, emotion.

Even though an aesthetics regarding color and the relationships between music and visual colors are not definite and objectively granted, Tom DeWitt admits that inequality occurs in responding to colors and monochromes. He also mentioned a psychological effect of monochromic color as black and white neutralizes the human's emotion so that they preserve their objectivity in looking at a fact rather than responding with their feelings.<sup>108</sup>

The projection begins with an example of built materials after the industrial revolution, which is the brick wall. The white brick wall does not illustrate any human emotions. The whole industrial section is about means of communication created without humanistic aspects. The color in the video is restricted, otherwise artificial. The content of the video includes only industrial materials--iron, brick walls, and Morse code. That is an environmental reference tool has simplistic and minimalistic elements.

Morse code is a crucial aspect of this section. It is a communication system with symbols which are interpretable to people who share the code. This code is comparable to the binary code 0s and 1s that project symbols on the computer for its communicative system for information transfer. The video footage randomly arrays the Morse code assigned to each English letter at the beginning with achromatic colors. The presentation of Morse code augments the sound of the square waveform and the acoustic instruments such as the clarinet, buckets, and tam-tam. The footage with the iron industrial materials enhances the sound of tam-tam and buckets.

The layers of the building frame and the industry are comparable to the fact that the human uses computer programs with binary codes to generate building frames and they

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<sup>108</sup> Tom DeWitt, "Visual Music: Searching for An Aesthetics," *Leonardo* 20, no 2 (1987): 115-117



use Morse code as a means to communicate.

The only electronics sound at the end of the video shows Morse code in various colors. From the middle point are the colors not naturally generated. The video ends with the spelling of "INDUSTRIAL" with Morse code assigned to each letter in distinctive artificial colors.

The industrial section emulates the coldness of electric technology working against the human bloodstream. The lack of warm blood in the operation of the machine generates the feeling of indifference within the name "industrial," so that the light starts the section with achromatic colors.

However, another aspect of the industrial section is artificiality. The human can experience sunlight only within a specific time. The sun is out of the human's control. We merely follow the time set according to solar movement and apply the lighting to our lives. Contrast the natural light caused by the sun with the technology of electricity which allows the human to control lighting. The human manages to create color lighting at their wish. Technology elevates the threshold of possible colors the human can create without restrictions. Thus the later industrial section occurs in various colors.

The light starts the section with "Metallic Gray" (Neutral Gray #398) and then adds "Metallic Blue" (Daylight Blue #65). The light represents the artificiality of technology and lights 'world possibilities' with colorful beams (example: Skelton Exotic Sangria #39, Salmon #41, Middle Rose #44, Lilac #55, Light Salmon Pink #30) entering at a slow pace. Artificial colors "Bright Yellow" (CalColor 30 Yellow #4530), "Bright Pink" (Salmon Pink #31), "Bright Orange" (Light Salmon Pink #30) (Electric beam, or

electric brush-like artificial looking colors) alternate as bright electric lines with the musical rhythm. The light colors start to blink in order to project an illusionary effect of being in a club where artificial sounds (electronic music, techno) and artificial lighting occur (Rehearsal X).

The industrial section is somewhat different than the other sections in that those elements of technology starting with Morse code are pervasive throughout the whole segment. The main theme of this section is the beeping sound of Morse code with dashes and dots. This format is coincident with the sound of Morse code because it is somewhat analogous to that of a square waveform. It is comparable to the fact the square waveform consists only of even-numbered harmonics in the frequency spectrum.

At the beginning of the section comes the short sound of the square waveform repeating at varying speeds. The Morse code is a communication device and each English alphabet has its code and sound. A dot has a short sound and a dash has a long one. These symbols with dots and dashes are analogous to bits of 0s and 1s on the computer.

Electronics on the section open up with Morse code of "INDUSTRIAL". Interestingly the rhythm in the clarinet and percussion is long, short, short and long. This is comparable with "X" which has one dash, and two dots followed by one more dash. The variation of Morse code, X follows the Morse code of industrial. X is a symbol of an unknown value. The Morse code is uninterpretable to people who do not share its meaning.

This section incorporates the sound of Morse code rhythmically. Musically the material repeats, but with irregularity. Electronics coincides with the percussive

arrangements of the acoustic instruments. The repetition is a representation of industrial society. The reproduction system allows copying ideas or products and generating in the same format several times, sometimes, even infinite times. This phenomenon in the industry with advanced technology starts erasing the individuality at a fast pace. The human communicates with each other using devices based on binary codes.

Musically, the sound of Morse code (square waveform) and the style of the arrangement are essential in this section. The compositional technique for this section is a) alternation b) randomness c) additive, d) subtractive and e) accent variations with limited ideas to illustrate the reproduction. The figure with the Morse code represents a group of active particles in the air surrounding the industrial city. The texture gets thicker when Morse codes develop from gray to colorful.

Figure 24. Table: Parameter Application for *III. Industrial*

Temperature	Cold-refined sound
Emotion	Cold
Transition	Hard cut
Light	From gray to all colors
Sound	Electronic
Speed	Fast
Texture	From low to high

WHAT WE SEE IS WHAT WE DESIRE TO SEE

**V [III. INDUSTRIAL]**

Fl.  $\text{♩} = 80$

B♭ Cl.  $\text{♩} = 80$

Bsn.  $\text{♩} = 80$

Perc. 1  $\text{♩} = 80$  Steak bucket with small diameter beater  
 $f$

Perc. 2  $\text{♩} = 80$  on rim with triangle beater  
 $f$  regular mallet on the body

Elec.  $\text{♩} = 80$  (E4) record mic 1, 3, 5 square waveform

Lights  $\text{♩} = 80$  (L21) Slowly dissolves to Metallic Gray (Neutral Grey #398)

Proj.  $\text{♩} = 80$  Morse codes

Pno.  $\text{♩} = 80$

Vln. I  $\text{♩} = 80$

Vln. II  $\text{♩} = 80$

Vla.  $\text{♩} = 80$

Vc.  $\text{♩} = 80$

C.B.  $\text{♩} = 80$

The musical score is for a section titled 'III. INDUSTRIAL' and is marked with a 'V' in a box. It features a tempo of 80 beats per minute. The instruments and parts include:

- Flute (Fl.)
- Bass Clarinet (B♭ Cl.)
- Bassoon (Bsn.)
- Percussion 1 (Perc. 1): Steak bucket with small diameter beater, marked  $f$ .
- Percussion 2 (Perc. 2): on rim with triangle beater, marked  $f$ ; regular mallet on the body.
- Electric (Elec.): (E4) record mic 1, 3, 5 square waveform.
- Lights: (L21) Slowly dissolves to Metallic Gray (Neutral Grey #398).
- Projection (Proj.): Morse codes.
- Piano (Pno.)
- Violin I (Vln. I)
- Violin II (Vln. II)
- Viola (Vla.)
- Violoncello (Vc.)
- Contrabass (C.B.)

The score is written in 2/4 time and consists of 10 measures. The percussion parts are the most active, with the electric part playing a square waveform. The other instruments are mostly silent or have minimal activity.

Figure 25. Musical Example: *III. Industrial*, Morse Code, mm.321-325

This section is the beginning of *III. Industrial*. In the beginning, the human changes the environment to survive by building a habitat. The sound of hitting a bucket in a short irregular pattern is similar to the sound of hitting rocks or bricks with tools: hammers, beaters or mallets. It is comparable to percussion hits by mallets. This irregular pattern with a short sound is analogous to the sound of Morse code beeping. The short sound is used as a symbol of building an industrial structure in the human society.

It first starts with metallic sounds by the bucket and tam-tam hits. The clarinet joins with short rhythmic patterns, almost layering to achieve the same rhythmic effect. The bucket and tam-tam sounds are more metallic and indicate the material while the sounds of clarinet suggest the Morse code. These rhythmic figures march unperturbed by the human's desire to create better tools for life.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

359 **Y** (Morse code in a humanistic mode with electric melody)

Fl. *mf*

B. Cl. *mf*

Bsn. *mf*

Perc. 1 **Y** susp cymb. *mf* vibe with senza pedal *mf*

Perc. 2 Timp *pp* *mf* woodblocks *mf*

Elec *mf*

Lights **L23** Slightly beaming artificial lights  
(example: Skelton Exotic Sangria #39, Salmon #41,  
Middle Rose #44, Lilac #55, Light Salmon Pink #30)  
in a slow pace

Proj

Pno. *mf*

Vln. I **Y** arco. *mf*

Vln. II *mf*

Vla. arco. *mf*

Vc. arco. *mf*

C.B. arco. *mf*

Figure 26. Musical Example: III. Industrial, Morse Code in Humanistic Electric Melody, mm. 359-362

Morse code develops more dynamic movement during this section, travelling in a way that encompasses buildings and roads in diversified colors of lighting. The colors start to become more vibrant, the textures of Morse code are thicker than before, and the movement speeds vary.

Thematically and stylistically, this section consists of the characteristics of Morse code and the human. Violin I introduces a new melodic line reinforced by the flute and clarinet's fragmentation, with a counter melody in the contrabass and bassoon suggesting human emotion. Morse code is a human creation intended to overcome flaws caused by nature and to open possibilities to alternatives variables. This Morse code surrounds the human's life, follows everywhere the human goes, and touches every action the human takes. The rhythmic punch in the percussion emphasizes short repetitive rhythmic patterns in the piano, violin II, and viola. This rhythmic ostinato describes the Morse code itself, which is continuously presented here from the previous section.

### **3-1. Transition Black 3. Stage of Fear**

The third black section is the human's fear of uncontrollable possibilities opened up by the technology they create. Living with more possibilities often creates confusion and causes more hardship than living with limited choices. In Gilroy's *Jewels Brought from Bondage*, the transformation of culture through the exposition to the external world is described as an adaptive form of their values towards the changed situation. One example is Asian immigrants to Britain who invented "a new mode of cultural production

with an identity to match.”<sup>109</sup> As Gilroy mentions, cultural transformation and reconstruction is inevitable, especially in global society. These kinds of confusion caused by connectivity become even more complicated when they must coexist with technology. Stalder mentions that new technology can become a new big agenda and that “the changes in the organization of the digital are taken to be so powerful that they simply impact on the material reality.”<sup>110</sup>

The short projection video includes heavily saturated images of caves in order to get a darker effect. The environment itself creates fear that resides inside the human. The cave is a place with which the human has no familiarity, and it needs so-called cooperation of tools for the human to overcome the limitation of their eyes. Without any help, the human experiences more fear and envisions what they like to hear and see. The sound of a voice with electronics is not visible, but this coexists within the cave. This section starts with blurry images that are not recognizable, but they become more lucid at the end. The fear-inducing textures are simple shapes designed by the cave.

The light goes out. Only a “Yellow” (CalColor 60 #4560) spot light moves around the stage incidentally striking the performers (a link to the human).

The human feels the threat to their humanity from the continuous development of technology. Electronics in the third black section *Stage of Fear* contains deceptive voices. Simultaneously, cave projections present a ‘delayed’ tunnel, the electronically processed voices have significantly delayed sounds.

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<sup>109</sup> Paul Gilroy, “Jewels Brought from Bondage,” in *The Black Atlantic: Modernity and Double Consciousness* (Cambridge, Mass: Harvard University Press, 1993), 82.

<sup>110</sup> Felix Stalder, “Between Democracy and Spectacle: The Front-End and Back-End of the Social Web,” in *Social Media Reader*, ed. Michael Mandiberg (New York: New York University Press, 2012), 243.



WHAT WE SEE IS WHAT WE DESIRE TO SEE

Figure 27. Musical Example: *Transition Black 3. Stage of Fear*, mm. 396-397

This transition is right before *IV. Battle*. It continues the piano short ostinato pattern which recalls dust cracked from deterioration of industrial buildings and codes.

The main cause of this destruction is the human's fear which leads to obliterate what they have created. This specific section portrays prickles as ashes or floating dirt and creates a underground atmosphere.

#### **4. Movement IV. The Battle**

The dominant color of *IV. Battle* is red. The video starts with a big red circle and a large rectangle roaming slowly. The red circle implies several viable perceptions in relation to the objects making the illusion. It is a drop of blood. It is a sun. It is an atom of elements. It is a pocket ball. The shape of the circle implies things that are not red. It is a universe. It is a moon. It is a dot of Morse code. It is a human head. The rectangle is a dash of Morse code. It is land. It is a road. It is a building. It is an arm, a body or a leg. The large circle means a universe in which we occupy a limited space within a limited time frame. The minimalistic materials demonstrate the human's struggle to fight for more resources for themselves within the constraint. From the uncontrollable development made by considerable decades of human ambition and hunger is the endless appetite and aspirations of the things left behind us.

The music stops intermittently as the human keeps reconsidering and reevaluating what they have done in the process of development. The red circles in the video suggest red blood cells that represent humanistic anguish. The electronics sound processed is aligned with the Morse code. The snare drum sound suggests marching feet. The timing of changing footage does not always align with the musical rhythm to present more confusion between the natural flow and the artificial fixation with machines or technology.

“Black” in darkness slowly turns into “Bright Red” (Salmon #41) when the piece starts with red lines and diffuses from a few to several. “Dark Red” becomes darker “Dark Red 2” (Roscosun 1/4 CTO #3409). Later, the light adds tinted Purple (Special Lavender #54). Then “dark red “and “dark purple” rhythmically response to music. “Dark Purple” turns into “Darker Purple” (Storaro Indigo #2008) and becomes atmospheric but “Dark Red” is still the principle color.

The electronics incorporate the noise of the bell and the distorted sound of the square waveform (Morse code in *III. Industrial*). The section portrays instrumental music to signify the war-like stage in which the human struggles to fight against the conflicts resulting from their attempt to create illusional triumph over fear.

The sound of the noise applied to the bell-like sample contains random frequencies. Because of the disorder, the noise results in distortion. This distortion from the noise resembles the chaotic state caused by conflicts between people and the results they cause with advanced technology. The notation of the noisy bell hits instructs the electronics player to press the pad on specified beats coinciding with the other instruments. Electronic pads occur independent of the regular beats.

The bell sounds processed in various aspects move to random spaces in location and register. The final filtering applied to the bell sound is comparable to portrays the human's wish to end the state of being chaotic. The noise sound manipulated to emphasize higher frequencies suggests longing to approach the pure state of being in *I. Universe to the Sky*.

Percussion and rhythm are subgroups of all particles in conflicts in the universe so

that there are lots of unexpected hesitations in the beginning, to initiate the state of combat readiness. Red is the main color of the section, with its significant energy and long wavelength. The music in this section transmits the highest power to the audience with its strong dynamics and rhythmic congruency. The noise with random frequencies created from manipulating the bell sample sound illustrates conflict between the human and the machine. The pounding sound created with the whole instrument section simulates the human heartbeat. The percussion rhythm results from the justification of common sense about the war (the section is about the battle).

Figure 28. Table: Parameter Application for *IV. Battle*

Temperature	Hot
Light	Red
Sound	Strong and noisy
Music	Rhythmic and dense
Speed	Fast
Texture	Dense

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score for measures 401-403 of *IV. Battle* features the following instruments and parts:

- Fl.:** Measures 401-403 with dynamics *mf*, *f*, and *f*.
- B♭ Cl.:** Measures 401-403 with dynamics *mf*, *f*, and *f*.
- Bsn.:** Measures 401-403 with dynamics *mf*, *f*, and *f*.
- Perc. 1 (wood blocks):** Measures 401-403 with dynamics *ff*, *f*, and *ff*.
- Perc. 2:** Measures 401-403 with dynamics *ff*, *f*, and *ff*.
- Elec.:** Measure 401 with a dynamic of *f*.
- Lights:** Measure 401 with a dynamic of *f*.
- Proj.:** Measure 401 with a dynamic of *f*.
- Pno.:** Measures 401-403 with dynamics *f*, *f*, and *f*.
- Vln. I:** Measures 401-403 with dynamics *f*, *f*, and *f*.
- Vln. II:** Measures 401-403 with dynamics *f*, *f*, and *f*.
- Vla.:** Measures 401-403 with dynamics *f*, *f*, and *f*.
- Vc.:** Measures 401-403 with dynamics *f*, *f*, and *f*.
- C.B.:** Measures 401-403 with dynamics *ff*, *f*, and *f*.

Figure 29. Musical Example: *IV. Battle*, mm. 401-403

The exposition of *IV. Battle* invites conflicted elements. Timpani with a perfect fourth interval suggests stability of the ground. A light rhythm and timbre of woodwinds

cynically mock (like a woodpecker) the silliness the human cause on its own out of their weakness and fear and which, leads to more severe damage. Asymmetrical, unexpected chords for piano strings, and woodwinds signify the appearance of conflicted soldiers who fight anyway.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score is for the piece "WHAT WE SEE IS WHAT WE DESIRE TO SEE" (mm. 407-414). It features a variety of instruments and complex rhythmic patterns. The woodwinds (Flute, Bass Clarinet, Bassoon) play a woodpecker-like motif. The percussion (Perc. 1, Perc. 2, Elec) includes a snare drum pattern. The piano part features asymmetrical chords. The strings (Violin I, Violin II, Viola, Violoncello, Contrabass) play a rhythmic accompaniment. The score is marked with dynamics such as *p* (piano) and *f* (forte).

Figure 30. Musical Example: *IV. Battle*, mm. 407-414

This section portrays martial walking with frequent breaks to give the audience the sense of modification of satire. The human walks in order to alter nature and to fulfill innate human mental desire. Ironically, that adjustment halts further progressions due to its malfunction and side effects.

The frequent breaks in rhythmic patterns resemble hiccups. So the snare and timpani share a rhythmic pattern which rarely lines up except in m. 421. The piano rhythm is complementary to the string rhythm in which light timbre breaks with a hint of staccatos, but no more than that.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

(2+3)

Fl. *mf* *ff*

B♭ Cl. *mf* *ff*

Bsn. *mf* *ff*

Perc. 1 Triangle *mf* *f* *fp* *f*

Perc. 2 *mf* *ff* *fp* *f*

Elec.  $\frac{2}{4}$

Lights  $\frac{2}{4}$  (L24) BRIGHT RED TO DARK RED

Proj.  $\frac{2}{4}$

Pno. *ff*

Vln. I *ff* *mf* *f* *mf*

Vln. II *ff* *mf* *f* *mf*

Vla. *ff* *f*

Vc. *ff*

C.B. *ff*

Figure 31. Musical Example: *IV. Battle*, mm. 423-428



This section with short rhythms scattered through instruments is the beginning of *IV. Battle* with segments that confuse the human's life. After building new technology and constant construction to better the world, the human realizes the limitation and discomfort they create in contrast to their original intention. The conflicts between a desire for the further development and a cautious pause with consideration of what the human lost in the process start to dismantle them mentally. On this initial stage, the rhythmic pattern is not complete; only within an instrument. The pattern is somewhat broken and dispersed rhythms consist of short notes and hesitations.

WHAT WE SEE IS WHAT WE DESIRE TO SEE (4+3)

500

Fl.

500

B♭ Cl.

500

Bsn.

500

Perc. 1

500

Perc. 2

500

Elec

500

Lights

500

Proj

500

Pno.

500

Vln. I

500

Vln. II

500

Vla.

500

Vc.

500

C.B.

Figure 32. Musical Example: *IV. Battle*, mm. 500-503

This section is where the complete form of machine objects fight with the prickly partials of the elements that the machines contain as part of their origin. The shift

between the homophonic rhythms and prickly arpeggiated rhythms produces potential interactions.  $2/4$  meter alters with  $7/16$  to enhance the rhythmic intensity.  $7/16$  meter gives a sense of incompleteness and suggests that one or more missing parts in the machine have fallen apart or been obliterated.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Figure 33. Musical Example: *IV. Battle*, mm. 504-507

The constant short, rhythmic forces portray the scene that all soldiers of Morse code and the pure state of the human march against each other. The lines form at different

angles and directions and continuously move. To accomplish the effect of the movements in Morse code, this section's rhythm, instrumentation, and harmonies create a three-dimensional effect. While strings often play continuous rhythms on sixteenth notes, woodwinds, piano, and percussions accentuate odd beats (1, 3, 5, 7th of sixteenth notes). Unexpected interference caused by the time signature  $7/16$  provides relief from the momentum of  $2/4$ . This alternation also provides a three-dimensional effect. Harmonic tension between the minor 2nd and tritone is often layered with each other but in more open voices to provide spaces between notes which means that conflicts between Morse code and the human are intertwined but have some flexibilities between to get along with.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

The musical score consists of 13 staves. From top to bottom, they are: Flute (Fl.), B♭ Clarinet (B♭ Cl.), Bassoon (Bsn.), Percussion 1 (Perc. 1), Percussion 2 (Perc. 2), Electric (Elec.), Lights, Projection (Proj.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Via.), Violoncello (Vc.), and Contrabass (C.B.). The score is for measures 519 to 522. The title 'WHAT WE SEE IS WHAT WE DESIRE TO SEE' is centered above the first staff. The music is a homophonic rhythmic pattern where all instruments play the same rhythmic figure: two accented thirty-second notes followed by a sixteenth rest, repeated in a 7/16 time signature.

Figure 34. Musical Example: *IV. Battle*, mm. 519-522

This figure contains the only section in which all instruments play homophonically to produce the most powerful moment of the piece. Accented rhythmic punches consist of two continuous thirty-second note values and a sixteenth rest in 7/16.

The beat shift starts with the bassoon, percussion, piano, violin II and viola and breaks the homophonically produced sound punches. Then, the flute, clarinet, piano, violin I, the cello and contrabass shift their rhythms. Later, the bassoon, violin II, and the viola shift their rhythms again.

#### **4-1. Transition Black 4. Sinking and Black Hole**

The big red circle returns at the transition from *IV. Battle* to *Transition Black 4. Sinking and Black Hole*. This red circle represents the universe in which the human builds and fights. Now, the red smog of smoke covers the whole world instead of clean clouds. The *Black 4.* section is a denotation of the hope that all confusion will disappear with the red fumes and fogs.

The last black section implies the destruction as conflicts between humanism and mechanism sink into the underground. The section starts with the projected image of a flag swaying in the air, clouds inside the red sun and the red Morse code symbol appearing inside the falling ball of red. “Dark Red” becomes “Darker Red” (CalColor 60 Red #4660). The purple wave comes in and out, and dotted sparkling light of various colors create a mixture of electric shock. Later all lights dissolve to black. Only the performers are illuminated. Black slowly loses its saturation and dissolves to transparent white (extremely cold winter-like color-CalColor 7.5 Cyan #4307 and Frost #100).

Musically, the section continues conflicts in *IV. Battle* and pushes everything into the underground to create a place for a new start. The repetition of an ostinato under the melody reinforces the sinking process of this fourth black transition. The state of healing and meditation is close to the state of aftereffect of the black hole. The refrain becomes a

means of *territorialization*.<sup>111</sup> The repetition provides critical elements to hold diverse expressive parameters together. Repetition in the form of cycles unites recurring elements. Spectator or audience becomes familiarized with the expressed elements through repetition, and newly introduced portions. The repetition can promote the creation of an organic whole.<sup>112</sup>

### **5. Movement V. After Battle**

This section is the transition for the human to enter the next stage in their life. The place that seems impossible to reach approaches when the human is ready to acquire and adapt to their living nest. The music and electronics are cold and the texture is sparse as the image of a person without any facial expression freezes inside the blue. This chilliness soon faces contestation with the unanticipated color green. The piece ends with the closest color to the liveliness in nature (green) to tell a message that green is the color of hope.

The color for the section is white and light blue, and later to green. The whole sound is cold, so the entire section has light saturation. The section starts with Light Blue (CalColor 7.5 Cyan #4307) and Light Tough Frost #102 merges slowly. It completely turns into white and tinted blue. The light slowly dissolves from “Light Blue 3” (CalColor 15 Cyan #4314 to “Light Green” (Tough 1/8 Plusgreen) again to “Forest Green” (CalColor 60 Green #4460) to “Darker Green” (Storaro Green #2004) when a green tree appears on the projection.

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<sup>111</sup> Amy Herzog, *Dreams of Difference, Songs of the Same: The Musical Moment in Film* (MN: University of Minnesota Press, 2009), 73.

<sup>112</sup> *Ibid.*, 81-6.



This section signifies the journey of a human searching for peace and hoping to cope with the universe and nature. Throughout the piece the human finds a way to dismantle existing concerns and conflicts within themselves not from outside.

Electronics tries to provide solutions to the human's dilemma by adapting a recorded lullaby theme in strings from *II. Human*.

Groups of high frequencies captured randomly and dispersed in the space with the granular processing of Ableton Live are analogous to the vibrant elements floating in the air. The energies and particles in the universe are invisible to the human, but they exist, and the human perceives them with other means than eyes. The stage that the human can achieve by seeking essential values that do not necessarily produce immediate progress or well-being, but values which allow the human to relate in co-existence with universe.

The section musically creates open space, the loneliness of the human species; an injured soul (unresolved cracking crystal glasses). At the beginning of the section, the human does not go anywhere and they do not have goals. They roam and struggle to find a new way to conquer the infinite space and time before them. The wind keeps blowing that moves the human forward, cold and dead, then reborn. The human likes the sky because they sense that it is a place with no conflicts.

Figure 35. Table: Parameter Application for *V. After Battle*

Temperature	Cold: high in register, electronics in high frequencies
Emotion	Cold to neutral
Transition	Soft
Light	Whitish blue to green
Sound	Pure,
Texture	Light
Speed	Slow

WHAT WE SEE IS WHAT WE DESIRE TO SEE

Fl. [OO] [V. AFTER BATTLE]

B♭ Cl.

Bsn.

Perc. 1 [OO]

Perc. 2

Elec. [E23] process2 granular + filter delay

Lights [L34] Light blue (CalColor 7.5 Cyan #4307) + Light Touch Frost #102 slowly merges

Proj. [play] video V. After Battle

Pno. *pp* *pp* *non espress.*

Vln. I *p* *mp* *pp* *p* *pp* *poco* *mf* *mp*

Vln. II

Vla.

Vc.

C.B.

Figure 36. Musical Example: *V. After Battle*, mm. 582-592

This figure is a theme of after battle played in violin I. This theme also appears in *the transition Black 4*. The film in *V. After battle* shows piles of broken glasses as a little

hill and an injured person walking on it alone. To depict the loneliness of the battle's survivor, I used only one instrument, violin I to play the theme. The glissando between adjacent notes in flute and clarinet create a windy sound and enhance the coldness of the scene. The slow piano interjections in open harmony add intense emotion to the impression of a person walking in a cold, open space. Pizzicati in cello move in half notes to depict regular walking.

WHAT WE SEE IS WHAT WE DESIRE TO SEE

611

Fl.

B♭ Cl.

Bsn.

Perc. 1

Perc. 2

Elec.

Lights

Proj.

Pno.

Vln. I

Vln. II

Vla.

Vc.

C.B.

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

Light Green" (Tough 1/8 Plusgreen) dissolves to "Forest Green" (CalColor 60 Green #4460)

"Forest Green" (CalColor 60 Green #4460) dissolves to Darker Green (Storaro Green #2004)

Figure 37. Musical Example: *V. After Battle*, mm. 611-621

The tam-tam enhances the coldness in *V. After Battle*, and at the end of the section, only the sound of the tam-tam continues to end all conflicts and bring new life (like a sprout). The tam-tam includes more harmonics than other instruments. It sounds as if individual elements move as particles in a long continuous gesture. The sound becomes textually continuous. The color and material of the tam-tam are industrial in that it is made of metal, but it creates high and low frequencies that are sometimes out of other instruments' reach. Alone it presents the unity among humans, industrial technology, and nature, and brings these into the universe again. Humans come from universe and returns to universe. The sound of the tam-tam is a symbol of the universe which brings us all together and its circle symbolizes the universe and the earth.

#### IV. Future Directions

This composition, *What We See is What We Desire to See for Color and Instruments* successfully externalizes the imaginary world with symbols. These symbols are from ordinary senses the human forms both at the individual and species level. The adaptation of universal symbols is crucial to form a field of communication between messengers such as music, color, visual images, receivers, and the audience.

In *Being and Nothingness*, Sartre mentioned that “to be seen is to be the object of values which come to qualify me without my being able to act on this qualification or even to know it.”<sup>113</sup> The values built on how we look at things (or how we are supposed to be looking) are summed up by the agreed-upon sense. As Sartre mentions, it is no question to be asked about the values. In Warren’s term, psychology is “a phenomenon characterizing the experiences of certain sensations belonging to one sense or mode attach[ed] to certain sensations of another group and [which] appear regularly whenever a stimulus of the latter type occurs.”<sup>114</sup> We experience any phenomenon of the world with values that connect each to communicate reactions through codes and practices registered in the brain. The common sense between collaborators and spectators often works as a critical tool to determine the value of a work.

As the subjectivity of art in respect to color is a central focus of this study, the composition results from the subjective issues of the composer, herself, regardless of objective or scientific impetus. As a result, there are three categories which epitomize

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<sup>113</sup> Kaja Silverman, *The Threshold of the Visible World* (New York: Routledge, 1996), 165.

<sup>114</sup> Kenneth Peacock, “Synesthetic Perception: Alexander Scriabin’s Color Hearing,” *Music Perception: An Interdisciplinary Journal* 2, no. 4 (July 1, 1985), 486.

symbols in this composition: nature, human, and industry (so-called scientific development or technology). The clouds, moon, sun, trees are in the category of nature. The drawings and imaginary pictures related to various impressions and activities of the human fall into the human category. The Morse code, materials made of iron and steel, repetition of structures and piled goods are in the last (industrial). Since common sense and cultural education are established in most human, these symbols take a critical role in helping to complement the appreciation of the piece.

The musical composition, *What We See is What We Desire to See for Color and Instruments* examines the relationship between color and music in the form of art allows a composer to develop later directions. Since the perception of color is grounded in survival, there are unlimited sources to develop in the future. Since this composition took a subjective and abstract approach in generating a relationship between color and music, next steps might include taking a more scientific approach such as applying spectrum bands from both sound and color and using them as controllers in order to design the lighting environment. Also the format of the final presentation might vary, such as a series of works with mono color, performance sets with other instrumentations such as a solo concerto, art installation and/or dance performance. This study presents tremendous opportunities in exploring collaborations in music and the other media.



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## Digital Resources: Video, DVD, CD (annotated)

### Videos

Eno, Brian. *77 Million Paintings*. DVD. Produced by Brian Eno. All Saints Records, 2007.

The music and painting moves slowly and evolves over time. The changes in two media are connected in some way. To see movements in both languages in slow motion creates a pace upon them.

Fischinger, Oskar . *Ten Films*. 1931. Films and Photographs by Fischinger trust. DVD. Center for Visual Music. 2006.

He became the ‘figurehead of an important group of color-music artist in southern California.’ He also made fourteen animated studies between 1928 and 1932.<sup>115</sup>

Glass, Philip. *La Belle et la Bete*. DVD. Produced by André Paulvé. France. Criterion Studio, 2003.

The whole movie is in black and white. Highly repetitive passages over black tone work through serenity and agitation at the same time. It could be useful to see the contrast between different musical effects on the same black tone.

Glass, Philip. *Einstein on the Beach*. DVD.

McLaren, Norman. Norman McLaren: The Masters Edition, Norman McLaren Collection, Colección Norman McLaren, Coleção Norman McLaren. Grant Munro and Jean Paul Ladouceur. DVD. Magnus Opus Collection.

*2001: A Space Odyssey*, directed by Stanley Kubrick. 1968. Burbank, CA: Warner Home Video. Turner Entertainment Co. and Warner Bros. Entertainment Inc. 2011. DVD.

As a result of the story, many scenes are driven by the effects of color lighting. Because a lot of universal scenes. It includes many black and pointy lighting changes. Color is simple most of the time, so it is helpful to investigate each scene regarding differences in color.

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<sup>115</sup> Tim Shephard and Anne Leonard, *The Routledge Companion to Music and Visual Culture*, (NY: Routledge, 2014), 18-20



Wagner, Richard. *Tristan und Isolde*, 1. Act by Metropolitan Opera Association Inc., New York (P) und Deutsche Grammophon GmbH, Hamburg, 2001. DVD.

The opera production is highly color driven by the lighting design. Lighting changes, for example from red to blue, work complementary with or contrast to music depending on the story telling.

Darling, Amanda. *II. Reflection of Truth. Music: Hearts Connected* by Cathy Burton, Omnia. 2012. <https://www.youtube.com/watch?v=6MyjFHd04R8>

Music is highly repetitive and synchronized with the rhythm, not the emotional effects. The shape of color lights morphs regardless of musical emotional changes. The piece shows colors and permits them to connect to rhythmic understanding and but do not necessarily manipulate human's emotion.

iGodMInd Subliminal and Meditation Mind Movies. *Extremely Powerful Third Eye Opening Binaural Beat Meditation*. 2014. <https://www.youtube.com/watch?v=tU3oAyin8W4>

It starts with electronic tones in mid low range with a spiral movement formed with blue particles. It slowly introduces green, then yellow or orange with warmer tone than before. Red does not substantially influence music, but does in visual. Sound is cold, but the visual is warm.

Meditation HD. *Psy Dark Trance. Original art by Scott Draves and the Electric Sheep*. 2014. <https://www.youtube.com/watch?v=O5RdMvgk8b0>

Repetition of color stream and musical rhythm is pervasive. Music and visual images often synchronize, but not necessarily lined up. It is useful to see the section when phase changed occur between colors and music.

Schubert, Alexander. *Lucky Dip*. 2013. [https://www.youtube.com/watch?v=mU\\_HCJ7Zfyg](https://www.youtube.com/watch?v=mU_HCJ7Zfyg)

This performance is mainly driven by the synchronization between music and lighting. Even though music and light are complement each other, the emotional impact varies. This demonstrates technical synchronization regardless of psychological synchronization.

Spencer, Jonathan. *Archer: An Audiovisual Piece about Uncertainty and Trajectory*. 2012. <https://vimeo.com/30317468>

The audiovisual piece shows well-synchronized relationship between visual and music. Most of the piece consists of black except some parts triggered by different sound of audio. It is helpful to figure relationship between black and pointy colors correlated to the musical changes in the piece.

Spencer, Jonathan. *Noise V014L H264*. 2013. <https://vimeo.com/50792826>

This audiovisual piece starts with white and slowly introduces other colors in the blue zone. The tone of black, blue, and white can be looked carefully to determine the evolvement in music. Musically it is repetitive with slight variations.

Thumb, Tom. *Progressive Psy Trance & Visuals. Music: Tuning In (Original Mix) by Stereofeld*. 2013. <https://www.youtube.com/watch?v=J1fp9zg6l-I>

The music adopts a repetitive form with transformations. Similarities applied to visual when colors and shapes in the video slowly transform, too. The types of color and movements are limited section by section.

## CDs

Ligeti, György. *Atmosphères. Gerd Zacher*. Ensemble InterContemporain, North German Raio Chorus Hamburg, Vienna Philharmonic Orchestra. Pierre Boulez, Helmut franz, and Claudio Abbado. Deutsche Grammophone #001767302. 2012. CD.

Scenes show colored lighting effects. It is considered as a mixed media, visual-audio. All cinematic elements such as “recorded speech and acting, music, sound, word, image, space and movement are balanced” in this music.<sup>116</sup> The atmospheric sound from Ligeti’s *Atmosphères* is used for the three-minute long with a black screen. It is a useful source to examine the relationship between the color and musical usage.

Messiaen, Olivier. *Des Canyons Aux Étoiles ; Oiseaux Exotiques ; Couleurs de La Cité Céleste*. New York, N.Y: CBS Masterworks, 1988. CD.

Messiaen, Olivier. *Eight Piano Préludes (Un Reflet Dans le Vent): Vingt Regards sur l’Enfant Jésus/Préludes*. Michel Beroff. EMI Classics. 2002. CD.

Messiaen thought that color and music are correlated mentioning “colors are complex and linked to equally complex chords and

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<sup>116</sup> Shaw-Miller, *Eye hEar the Visual in Music*, 123.

sonorities.”<sup>117</sup>

Messiaen, Olivier. *Quatuor Pour La Fin Du Temps ; Chronochromie*. Great Recordings of the Century. New York: EMI Classics, 2008. CD.  
<http://openurl.cdlib.org?sid=SCP:SCP&genre=article&pid=%3Cnaxos%3E5099921296253%3C%2Fnaxos%3E>.

Oliver Messiaen mentions “the gentle cascade of blue blue-orange chord” in the piano part of the second movement of the piece.<sup>118</sup>

Messiaen, Olivier. *Messiaen*. New Direction. Colchester, Essex, England: Chandos, 2007. CD.  
<http://openurl.cdlib.org?sid=SCP:SCP&genre=article&pid=%3Cnaxos%3ECHAN9301-02%3C%2Fnaxos%3E>.

Colors and sonorities in chords are all correspondent each other.<sup>119</sup>

Scriabin, Aleksandr Nikolayevich. *Mysterium: Prefactory Act. Symphony Poem in D minor/ Fantasy for Piano and Orchestra*. Elena Orlova and Yurlov Russian Choir. Kirill Kondrashin, et al. Russian Disc. 1995. CD.

Scriabin built music around a color theory. The image is steady through the section of the piece and changes to next section. It is somewhat different from Brian Eno’s audiovisual pieces in which everything moves slowly.

Scriabin, Aleksandr Nikolayevich. *La Poème De L’Extase; Piano Concerto, Prometheus*. London Philharmonic Orchestra, Cleveland Orchestra, and Vladimir Ashkenazy. Lorin Maazel. London/Decca. 1990. CD. Scriabin,

Scriabin, Aleksandr Nikolayevich. *Poem of Ecstasy: Op. 54*. Los Angeles Philharmonic Orchestra. Zubin Mehta. New York: London Records, 1967. CD.

This piece is considered as the first composition to be scored for orchestra and colored lights. Scriabin associated colors into twelve different pitches against the circle of fifth.<sup>120</sup> It would be critical to examine his theory through his music based on the relationship between color and music.

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<sup>117</sup> Shephard and Leonard, *The Routledge Companion to Music and Visual Culture*, 14-15.

<sup>118</sup> Olivier Messiaen, *The Technique of My musical Language* (Paris: Alphone Leduc, 1956), 51.

<sup>119</sup> Bernard. *Messiaen’s Synaesthesia*. P42.

<sup>120</sup> *Music and Modern Art*, 62-75.

Schnittke, Alfred. *The Yellow Sound: Der Gelbe Klang after Vassily Kandinsky*. Bolshoi Soloists' Ensemble. Alfred Schnittke. Toccata Classics. 2012. CD.

*Scheönberg, A.: String Quartet No.2/Webern, A: Langsamer Satz/Berg : Die Geheime Gesangstimme*. Peterson Quartet and Christine Schaefer. Phoenix. 2008. CD.

Kandinsky's writing *On the Spiritual in Arts* (1912) expresses his concerns for colors of sounds and synesthesia and mentions the influence of Schoenberg's music to his work. Schoenberg's *Theory of Harmony* is connected to his another writing *The Blue Rider Almanac* which suggest 'some ways of deriving a cosmic and aesthetic model from music.'<sup>121</sup>

Debussy, Claude. *Trois Nocturnes I. Nuages (Clouds), Fêtes (Festivals), Sirènes (Sirens), Printemps, Prélude à l'après: midi d'un faune, rapsodie pour clarinette: deux danses*. Female Section Accentus Chamber Choir. Luxembourg Philharmonic Orchestra. Emmanuel Krivine. Timpani. 2013. CD.

The piece is descriptive of different sounds combined with the image.

Debussy, Claude. *Pelleas Et Melisande Suite/Sonata for Flute, Viola and Harp*. Cleveland Orchestra. Erich Leinsdorf. Naxos Classical Archives. 2000. CD.

Piet Mondrian *Checkerboard with Light Colors (1919) painting*

He emphasized on the 'sound of surprise,' which is analogous to syncopation in jazz and thought the repetition, symmetry, and regularity are all based on a principle of equality.<sup>122</sup> His paintings are associated with different geometrical symmetries with colors. The concept of colors in the visual space explains his slow evolvement through the time.

Klein, Franz. *Black Reflection*. 1959.

The painting consists of colors including yellow, white, pink, and black. The black seemingly covers the other colors on the painting's right side. The progression through time seems get described in this painting.

Rimbaud, Arthur.

Symbolist painters, such as Rimbaud have supportive views on Scriabin's method to have painting elements in the music.

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<sup>121</sup> Ibid., 98-103.

<sup>122</sup> Ibid.,168-188.

Newman, Barnett. *Who's Afraid of Red, Yellow, and Blue III*. 1966-67.

It has big red, but thin black and even thinner yellow on the canvas. Even though it has three different colors, this paint suggests something different in case the blue or yellow dominates the whole canvas.

Flavin, Dan. *The Nominal Three (To William of Ockham)*. 1963.

It has minimal materials and color, but it creates surrealistic impression about lights.

Andriessen, Louis. *La Commedia*. Dutch National Opera:Asko and Schöenberg Ensembles. Reinbert de Leeuw. Nonesuch. 2014. CD.

Brown, Earl. *December 1952, Pieces for String Quartet*. 1951, 52.

His pieces are inspired “by the mobile sculptures of Alexander Calder and the gestural abstraction of Jackson Pollock. The score for *Pieces for String Quartet* is to capture ‘spontaneous musical image. ‘ He used multidimensional space for his piece with a graphic notation.<sup>123</sup>

Feldman, Morton. *Pieces for Four Pianos*. 1957. Bugallo-Williams Piano Duo. Wergo. 2009. CD.

Feldman, Morton. *Crippled Symmetry*. 1983. The Feldman Soloists. Frozen Reeds. 2012. CD.

Morton Felman considered himself as a painter and an artist. He did not overlook the connection between music and image. “He often remarked that the purpose of his music was to produce images; it does not work with motifs, but images. He said the repeated notes are not musical pointillism, as in Webern, but they are where the mind rests an image.”<sup>124</sup>

Ruders, Poul. *Nightshade Trilogy*. Capricorn and Odense Symphony Orchestra. Bridge Records, Inc. 2014. CD.

Satie, Erik. *Gymnopédies* .1888. Håkon Austbø. Brilliant Classics.2009. CD.

“Satie suggests that French painters provide the most appropriate models for French composers.” Satie often compares composers’ pieces to colors: the color of cultural characteristics as well as the absolute values

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<sup>123</sup> Shaw-Miller, *Eye hEar the Visual in Music*, 64-5.

<sup>124</sup> Shaw-Miller, *Eye hEar the Visual in Music*, 61.

*Gymnopédies* has colors repetition giving perspective rather than harmonic development.<sup>125</sup>

Varèse, Edgard. *Poème Électronique*. 1958. Royal Concertgebouw Orchestra, Asko Ensemble. Riccardo Chailly. Decca. 1998. CD.

Varèse, Edgard. *Ameriques; Arcana; Désert; Ionisation*. Chicago Symphony Orchestra. Pierre Boulez. DG. Deutsche Grammophone GmbH, Berlin. 2012. CD.

Varèse often painted and his music is considered as all about the sounds as the art painting on a canvas. He worked with artists in abstract expressionist school, such as Michel Cadoret, and Duchamp. His painting style is full of colors and dynamics.<sup>126</sup>

Keller, Max. *A Journey into Light with Max Keller*. DVD. Munich. Prestel Verlag. 2006.

The documentary covers the insight of lighting systematically and practically from historical to contemporary technological aspects. It shows the basic concept of lighting and the usage in the theater setting. This includes good examples that produce interesting environments projected by color lighting.

Krakora, Joseph J. *Vermeer: Master of Light*. DVD. San Francisco. Microcinema International. National Gallery of Art. 2009.

The documentary contains good examples of Vermeer's application of light in his painting. Most examples use color as an important artistic conveyance to direct understanding of the work. The detailed explanation about each painting is helpful to see the usage of light and color for proper expression.

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<sup>125</sup> Shaw-Miller, *Eye hEar the Visual in Music*, 52-6.

<sup>126</sup> Johnson, *The New York Schools of Music and Visual Arts*, 65-70.

## Appendix: Project Samples

### 1. Video mockup (see accompanying digital archive)

The composition is divided into seven mp4 (video) files:

Video\_Mockup\_1\_I\_Universe\_to\_Sky\_mm\_1\_to\_120.mp4  
Video\_Mockup\_2\_II\_The\_Human\_mm\_121\_303.mp4  
Video\_Mockup\_3\_Transition\_Black\_2\_Nightmare\_mm\_304\_328.mp4  
Video\_Mockup\_4\_III\_Industrial\_mm\_329\_382.mp4  
Video\_Mockup\_5\_Black\_3\_Stage\_of\_Fear\_mm\_383\_399.mp4  
Video\_Mockup\_6\_IV\_Battle\_mm\_400\_581.mp4  
Video\_Mockup\_7\_V\_After\_Battle\_mm\_582\_623.mp4

### 2. Max 7.4 patches

Max is available from Cycling `74 (<http://www.cycling74.com/>)

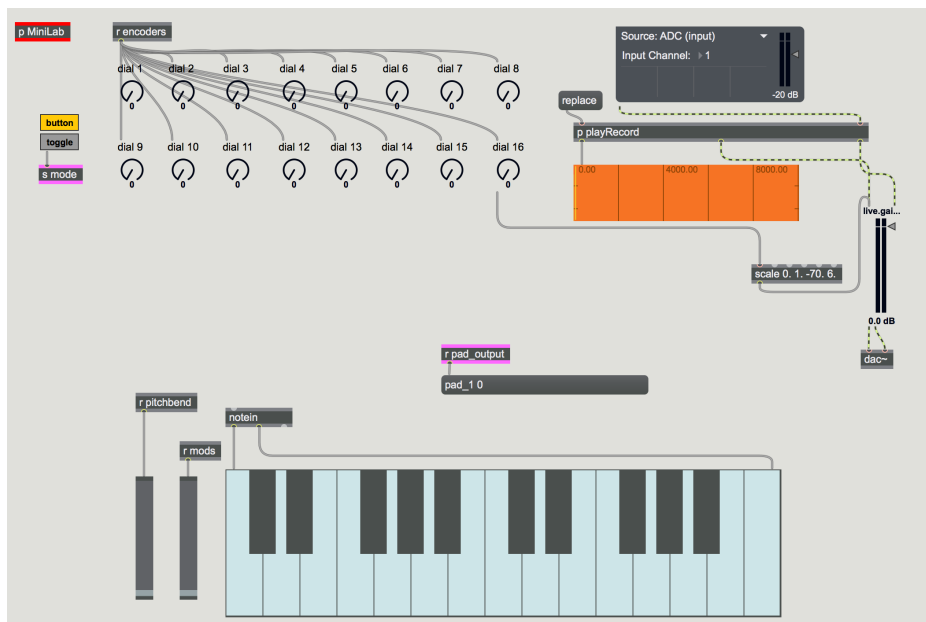


Figure 38. Programming Example: ArturiaMaster\_v2.maxpat (control screen)

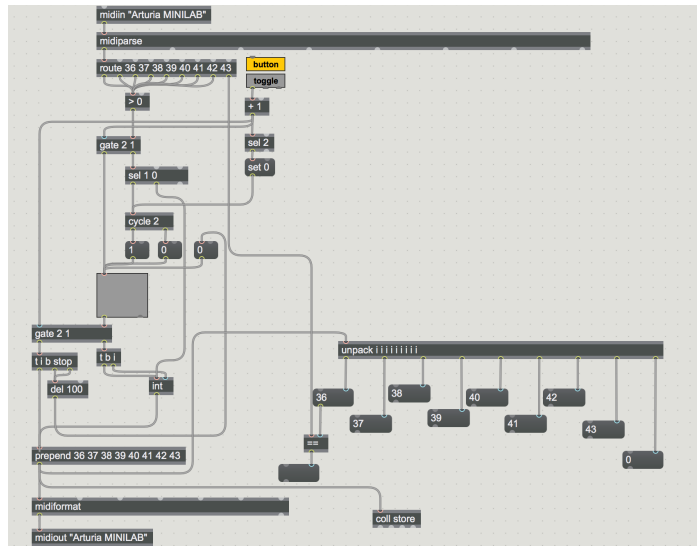


Figure 39. Programming Example: encoder1.maxpat (sub-patcher for pads)

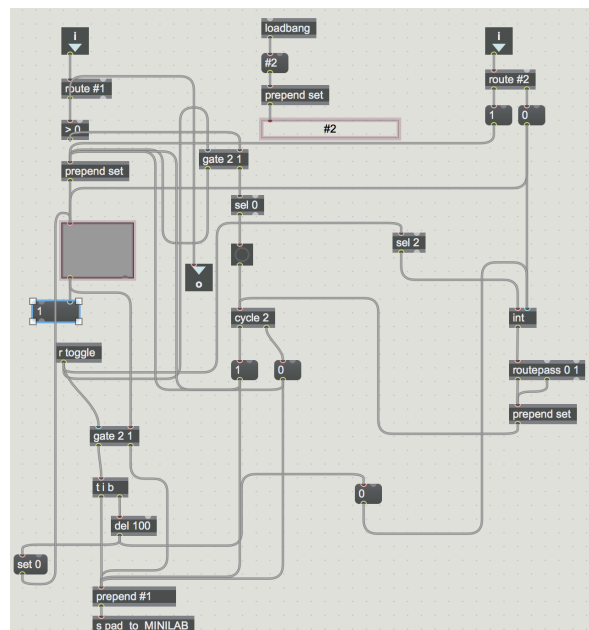


Figure 40. Programming Example: encoder1.maxpat (sub-patcher for pads)



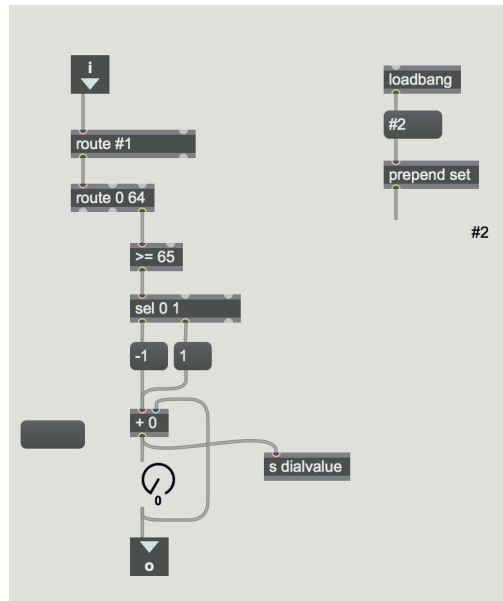


Figure 41. Programming Example: Two Way Toggle Mode\_v5.maxpat (sub-patcher for dial modes)

All patches are also available in the accompanying digital archive:

- Max Patches/arturiaMaster\_v2.maxpat
- Max Patches/encoder1.maxpat
- Max Patches/pad1.maxpat
- Max Patches/Two Way Toggle Mode\_v5.maxpat

3. Audio segments corresponding to musical examples/figures (see accompanying digital archive)

- Figure\_08.mp3
- Figure\_10.mp3
- Figure\_11.mp3
- Figure\_13.mp3
- Figure\_14.mp3
- Figure\_15.mp3
- Figure\_16.mp3
- Figure\_17.mp3
- Figure\_18.mp3
- Figure\_19.mp3
- Figure\_20.mp3
- Figure\_21.mp3

Figure\_22.mp3  
Figure\_23.mp3  
Figure\_25.mp3  
Figure\_26.mp3  
Figure\_27.mp3  
Figure\_29.mp3  
Figure\_30.mp3  
Figure\_31.mp3  
Figure\_32.mp3  
Figure\_33.mp3  
Figure\_34.mp3  
Figure\_36.mp3  
Figure\_37.mp3