

Fifty Years of Algorithmic Composition: Materials on My Digital Esthetic

Otto Laske

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www.ottolaske.com

Table of Contents

1.	Introduction to Digital Esthetics	01-13
2.	Music Composition	14-23
3.	Poetry	24-31
4.	Visual Arts	32-55
5.	Outlook	56

Introduction

I was born into a time in which the use of computer software in the arts became inescapable: the 1950's onward.

I began to make art using computer software in 1966, first and longest in music (1966-2010), then in poetry (1988-1992), and finally in the visual arts (2010 f).

I am continuing the line of algorithmic thinking starting with Alan Turing (died 1954) which, in the domain of music, in the 1950s moved on to Milton Babbitt, John Chowning, Gottfried M. Koenig, Lejaren Hiller, Max Mathews, Barry Vercoe, Iannis Xenakis, and others.

History of Digital Arts

- The history of Digital Arts began immediately after the computer science pioneer Alan Turing had died (1954).
- In 1955, at Bell Labs, Max Matthews wrote the first “sound synthesis” program and from then on developed the Music V program which in the 1990s morphed into Csound (Barry Vercoe, MIT).
- In parallel, European composers such as Xenakis and G. M. Koenig, but also American composers like Lejaren Hiller and Milton Babbitt, developed programs for “score synthesis”, such as Koenig’s *Project One* and *Project Two* programs.
- In the 1960’s, I. Xenakis wrote the book “Formalized Music: Thought and Mathematics in Composition” in which he described his compositional processes based on a variety of controlled-random procedures.
- In the 1970’s, Otto Laske established “cognitive musicology” both through empirical research (including with children) and hypothesis formulations regarding a musical grammar based on Chomsky. In the 1980’s, he used Koenig’s *Program One* (1967 f.) to join score synthesis to sound synthesis in an icon-based music composition program called *Kyma*.
- Digital work in visual arts started in the early 1970’s under the name of “computer graphics”. Today’s *Pixel Revolution* repeats the Partial Revolution in music in the 1950s.

A Digital Esthetic: Its Fruits in Music, Poetry, and the Visual Arts

The State of the Art of Digital Art

- Digital art today is often still seen as inferior, and certainly as less valuable, than work done in the institutionalized traditions of “visual art”, “painting”, “photography”, etc.
- This view is in part a defense against “change”, in part a backlash deriving from an abundance of technologies which are seen as the source of endlessly reproducible work that has lost the “aura” of works made by hand.
- Being an artist who has worked with computers in music, poetry, and the visual arts for almost 50 years, I find such views mistaken and see them as covering up a huge potential for creative work previously unthinkable.
- This set of slides introduces a digital esthetic I have developed in my artistic work; it provides some *food for thought* regarding what is presently missed by curators, artists, and the buyers of art alike.

Purpose of this Presentation

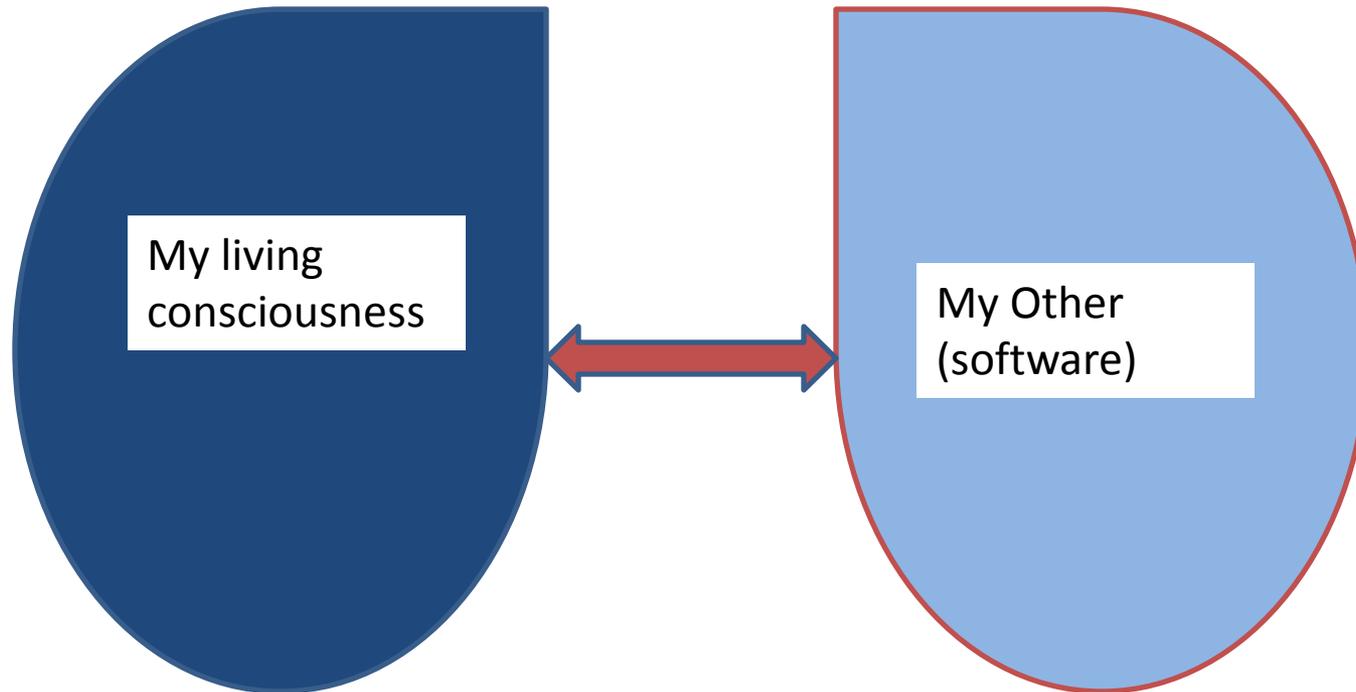
- In the slides that follow, I strive to define more clearly what I mean by “digital esthetic”.
- I want to show how this term takes on a slightly different meaning in music, poetry, and the visual arts but retains its boundary-crossing character.
- The base line of all of my own esthetic designs is derived from music composition whose history is full of approaches based on numbers and mathematical speculation.
- “Music” in a practical sense here means a focus on flow, tension, resolution of tensions, modulation, complex simultaneities, and virtual spaces through which sounds and images can be made to travel.

- My work in the arts is unconventional in that I have worked like an architect, making global designs of sets of works even when carrying out only a single sample of the set.
- I was guided in this by the spirit of the time in which my artistic work began, the 1950s, namely, the philosophy of “New Music”, especially in Europe.
- According to this philosophy, every art work starts as much as possible from one’s own design, thereby discounting or transcending traditions. (The poetic equivalent to this philosophy is found in Charles Olson’s notion of *projective verse*, of which below.)
- Of course, this approach to art making itself became a tradition in turn. Nevertheless, this tradition led me to approach art making as based on global, “top down”, designs in contrast to working on individual “pieces”.
- It is here that we find the core thought: that the boundaries between the arts are permeable, not as convention has it, sacrosanct.

In What Sense Is Art *Computable*?

- Distinguishing between sense-making and meaning-making, I would see computing software as a *sense-making device* able to scrutinize the esthetic potency of auditory, visual, or textual data.
- Being both sense- and meaning-makers, artists can make a part of their sense-making *computable*, for instance by using controlled random or other mathematical paradigms.
- In this sense, art becomes *computable* to the extent that the artist is willing to split creative performances between sense-making devices “outside of” his/her full control [an illusion anyway] and his/her own living consciousness.
- The artist then becomes a “computer artist,” that is, a *meaning-maker* in a heightened sense who functions as an interpreter of esthetic potential that is simply not available without a computing device.
- Importantly, what initially appears as being “external” to the artist’s consciousness (e.g., software) quickly becomes not only the artist’s assistant, but a part of the artist’s enlarged creative mind.
- It is in this context that I speak of software as the artist’s *Other* or Alter Ego.
- Software as the Other makes my digital esthetic instantaneously *dialectical*.
- As a result, I move into a dialogical “inter-world” in which my identity becomes “inter-developmental”, being intrinsically bound to its Other.

My Digital Esthetic (1)



As my *Other*, computer software triggers my creativity, presenting to me stimuli my brain has learned to react to.

I have a lifetime of esthetic experience stored in me, based on which I know how to respond to esthetic stimuli. I need not worry about the particular medium I am presently in; my consciousness will show me how to react to what is presented to me.

My Digital Esthetic (2)

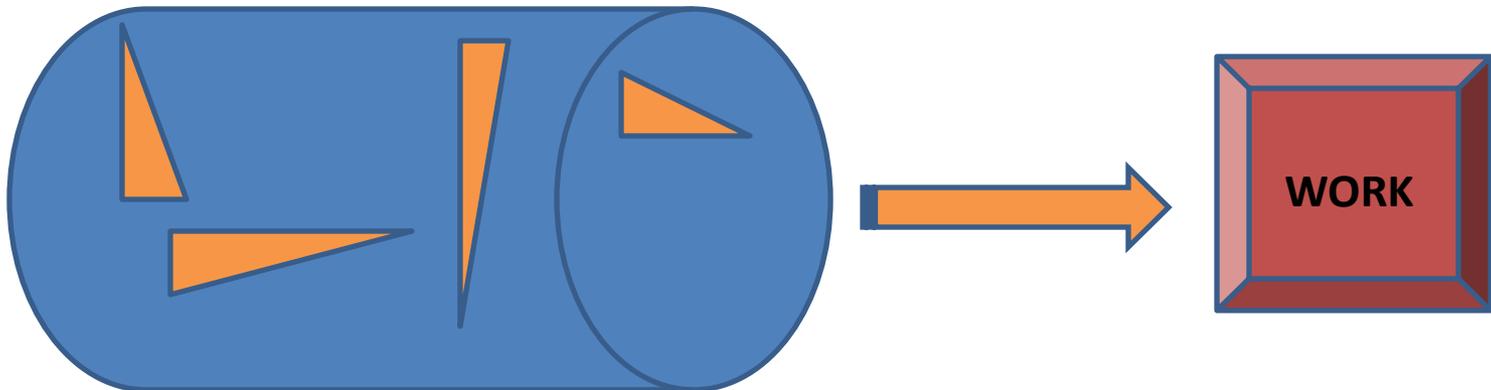
Software enables me to create *global designs* within which I can work out the details of a composition.

I see such designs as “fields”. Each field presents an assemblage of abstract (numerical) “parameters” that define sounds or images. Such an assemblage can be in the form of a *table of numbers, a computer-generated text, or an animation still*.

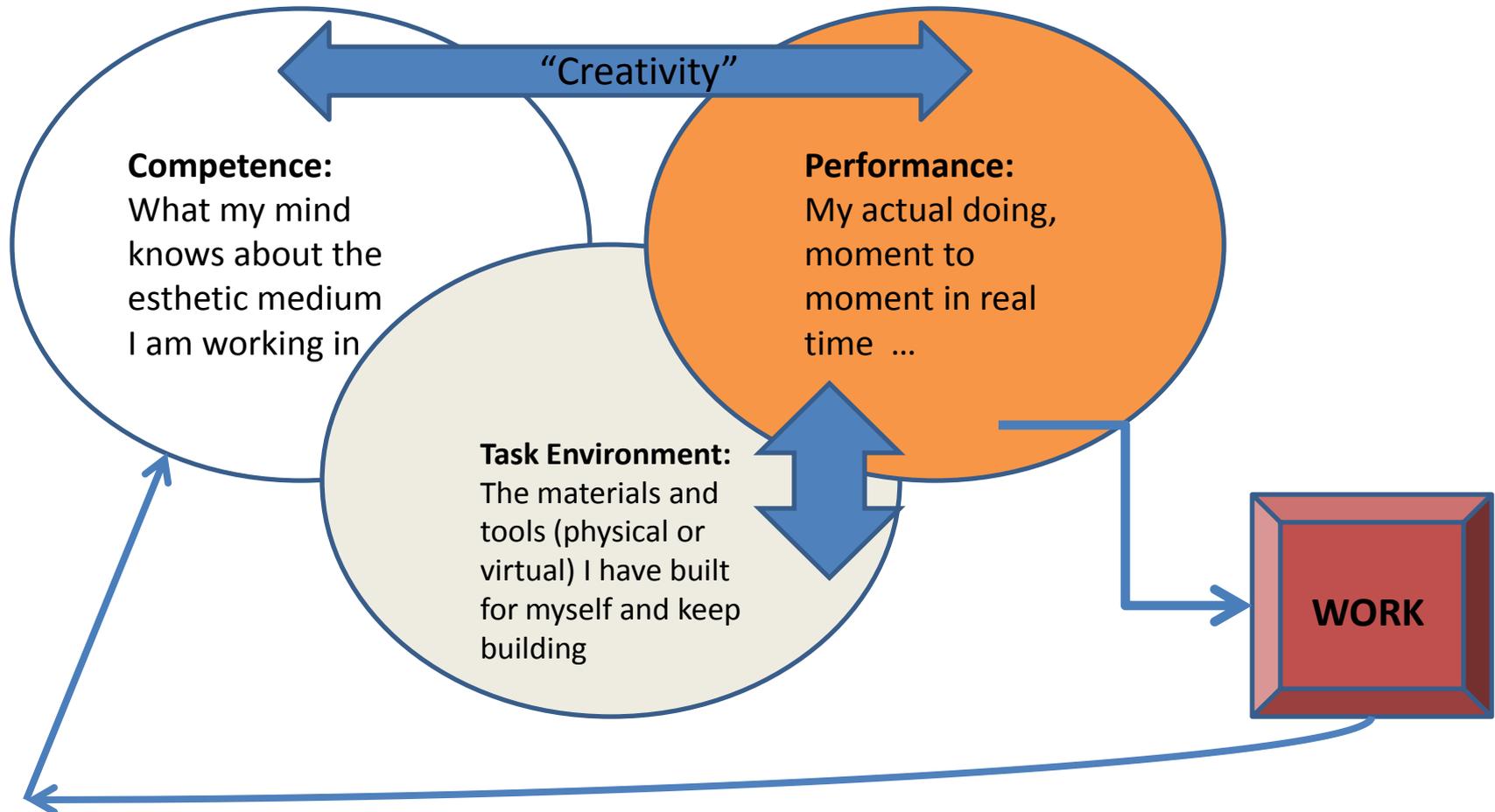
My task as an artist is to transform the **fields** I design into **energy fields**, namely:

- in poetry: into syllables and words carried by human breath;
- in music: into flow of sound in time;
- in the visual arts: into movements and shapes in a virtual space.

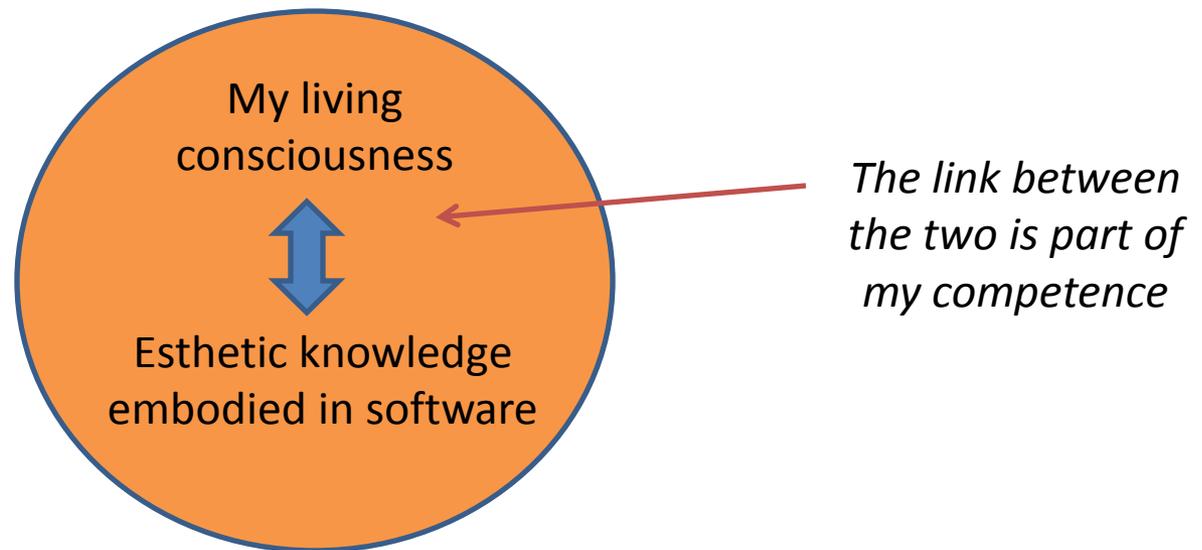
The fields define my **task environment** on which I bring to bear my competence.



My Digital Esthetic (3): Transferring Chomsky's Theory to Art Making



My Performance Happens in a Loop between My Living Mind and Knowledge Embodied in Software



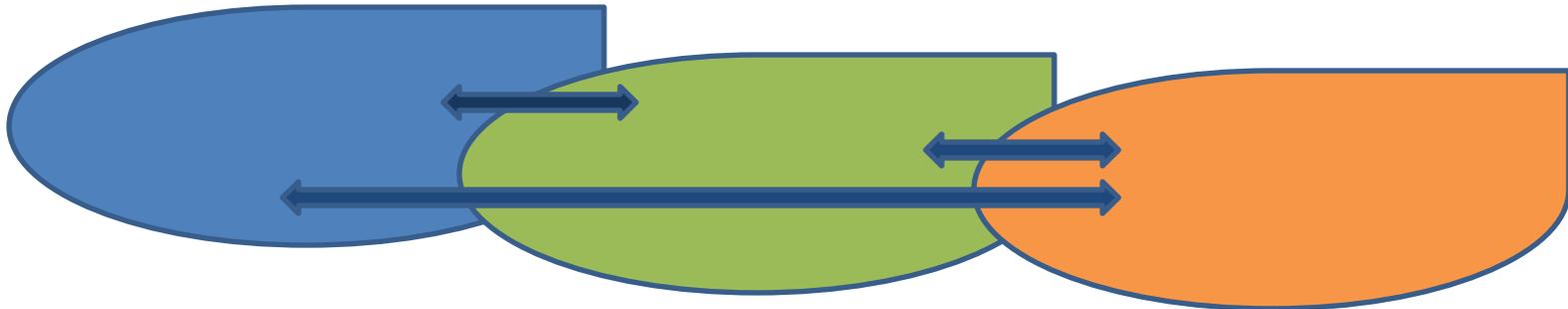
Using “commercial” software, I turn it to creative purposes, working against the grain of what my society expects of me.
My art making is as much about truth than beauty, following Schoenberg.

Permeable Esthetic Boundaries Testify to the Existence of “Mind”

Task Environment #1
(music)

Task Environment #2
(poetry)

Task Environment 3
(visual arts)



*Experience with different software-based task environments **transfers** across esthetic boundaries so that these become “permeable”.*

Music Composition

(www.ottolaske.com/music.html)

My interest in what is music and what is mind has been interconnected.

My focus in music has been twofold:
cognitive musicology and computer music composition.

In the first, I tried to understand what is “musical” about the mind; in the second, I have brought together “score synthesis” and “sound synthesis” based on global artistic designs.

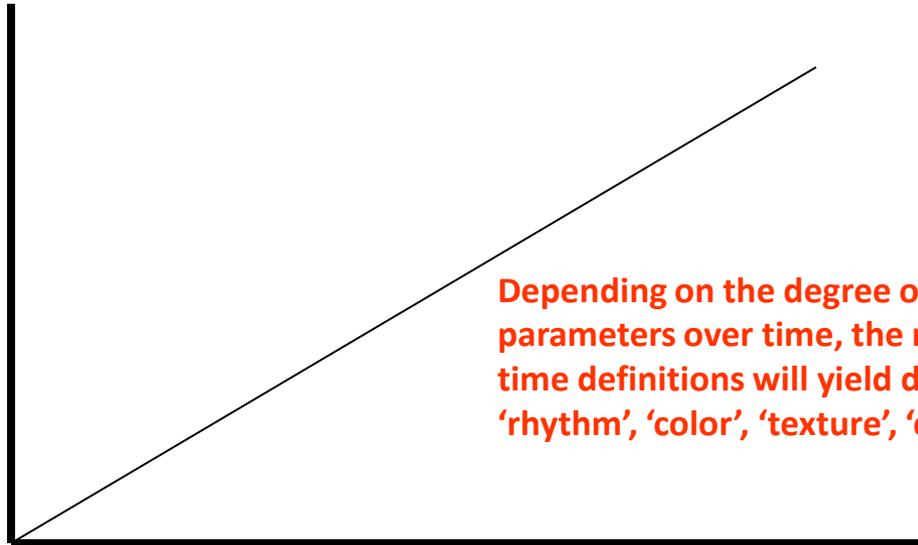
Example of Musical Design in the Composition Program *Project One* (1967 f.)

- Of the many music composition programs created from the 1960s onward, G. M. Koenig's *Project One* is a representative example.
- This program can equally be used for instrumental-vocal and electro-acoustic composition. (It has also been used for creating dances).
- The program implements the following ideas:
 - Musical sound can be analyzed into complementary *parameters* such as tone color, tone duration, tone height, tone sequence, levels of loudness, and sound origin in musical space.
 - These parameters taken together coalesce in time into musical sound, each of them following a different degree of change over time (e.g., pitch changes fast, durations slowly).
 - The composer designs musical forms by way of applying computational processes generating controlled random; s(he) carries out such designs by turning the table of numbers that result into energy fields realized by acoustic and/or virtual instruments.
 - In *Project One*, the composer's designs are focused on defining the harmonic relationships between tones (or partials in electronic music) and the successive start times of tones in time (entry delays). In the fusion of both dimensions, all musical elements required for making concert music emerge.
 - The resulting, software-generated numerical "scores" can be interpreted either in terms of traditional notation (instrumental-vocal composition) or can be "read" by software-based instruments and thus sounded directly through loudspeakers.
 - Traditional and software instruments can be freely merged.

Project One Conception of Music In Terms of Degrees of Change

PR1 deconstructs 'music' into two main dimensions: 'harmony' based on chords, and time based on 'entry delays.' All other parameters flow from these two.

Harmony,
defined in
terms of
intervals and
expressed in
terms of
**chords and
chord sizes**



Depending on the degree of change of musical parameters over time, the merger of harmony and time definitions will yield different types of 'melos,' 'rhythm,' 'color,' 'texture,' 'density,' etc.

Time, defined in terms of intervals called '**entry delays,**' gives rise to 'rhythm' through the linearization of chords

In PR1, a 'pitch' is a chord of size 1

Example of a Musical “Structure Formula” (Design)

Defining Two Contrasting Musical Sections

Assume that there are 7 “system processes” determining degree of change over time from “very fast” (=1) to “very slow” (7). You can then design musical movements different from each other.

Number of Score Sections = 2	Section A	Section B
Instruments (e.g., 4)	6	1
Start of Sound in Time	4	6
Pitch (Tone Height)	2	7
Register (High, Medium, Low)	5	3
Loudness (fff to ppp)	3	5
Tempo Range	45-65	60-90

The formula defines two contrasting sections, A and B.

A: instruments change slowly; sound entries change periodically; rapid pitch change (12 tones); homogeneous register giving rise to “melody”; loudness changing moderately fast.

B: instruments change rapidly (complex instrument mix); sound entries are nearly metric; pitch changes very slowly (repetitions; ostinati); quick-changing registers (specific to the instruments used); slowly changing loudness levels.

Score for 4 Acoustic Instruments

PROJECT 1 - - Score Table

8/25/2013

without accumulation

without horizontalization

Structure Formula for 7 Sections

Instrument: 5 4 3 2 1 6 7

Entry Delay: 6 5 4 1 2 3 7

Pitch: 3 6 5 1 7 4 2

Register: 6 1 3 2 7 4 5

Dynamics: 2 7 5 4 6 3 1

Section 1

	INSTR	RHYTHM			HARMONY							SEQ	REGISTER	DYNAMICS
		TEMPO	BEGIN	END	FERM									
1	* 1	104	* .8		* D	B	A#	G	F#		43521	44444	* ppp	
2	1		.8		* B	C	D#	F	F#		45213	44555	fff	
3	* 2		.8		* C#	D					12	55	f	
4	2		.8			F#	G				12	55	p	
5	* 4		.8		* E	F	G#				231	666	ff	
6	4		.8			A#					1	6	pp	
7	4		.8		1 * G	E	D#	C			4123	6333	* mf	
8	* 3	90	* .63		* C	C#	F	F#	G		43251	33333	ff	
9	3		.63		* G#	A	C#	F#	A#	B	234615	333335	f	
10													

Score for 4 Electro-Acoustic Instruments

(translating “notes” into “partials”)

```
;form1d-4ikyma
```

i1	0	0.93	246.94	2000	-0.28
i1	0	0.93	184.99	2000	-6.12
i1	0	0.93	220	2000	-0.10
i2	0.93	0.5	349.22	2000	6.12
i4	1.43	0.56	32.70	2000	-0.20
i4	1.43	0.56	77.78	2000	0.71
i4	2	1.12	220	2000	1
i4	2	1.12	293.66	2000	-1
i4	3.12	0.18	61.73	2000	0.75
i4	3.12	0.18	41.20	2000	0.97
i3	3.31	0.18	69.29	32000	-0.59
i3	3.31	0.18	92.49	32000	0.61
i4	3.5	0.93	369.99	32000	-0.10
i4	3.5	0.93	277.18	32000	0.30
i4	3.5	0.93	493.88	32000	-0.44
i4	3.5	0.93	329.62	32000	0.32
i2	4.43	0.18	36.70	32000	0.89
i3	4.62	1.2	130.81	32000	-0.57
i3	4.62	1.2	174.61	32000	0.32
i3	5.82	1.5	97.99	32000	0
i1	7.32	0.37	293.66	32000	0.30
i2	7.7	0.37	164.81	4000	0.28
i1	8.07	0.5	73.41	4000	-0.89
i1	8.07	0.5	48.99	4000	0.16
i4	8.57	0.5	82.40	4000	0.77
i4	8.57	0.5	207.65	4000	0.48
i3	9.07	1.2	277.18	4000	0.14
i4	10.27	1.5	51.91	4000	0.69
i4	10.27	1.5	34.64	4000	0.75
i4	10.27	1.5	58.27	4000	0.38

**p1=instr, p2=start, p3=dur; p4=freq, p5=amp,
p6=location in acoustic space (center=0, left=1, or right=-1) (Lorelei I, 2004)**

Compositional Procedure

- A global design formulated in Project One manifests as a **table of numbers**; these represent virtual sounds in terms of their musical *parameters* such as tone color, tone height, metric position (or duration), loudness, etc.
- The numerical table defines a *set* of compositions, not an individual composition, thus can give rise to entirely different compositions.
- By interpreting the table differently for different instruments, the composer can adapt the design to a specific artistic project.
- Each column of the table stands for a single musical parameter (e.g., tone height or pitch) changing over time according to a specified degree of change (1 [fast]-7 [slow]).
- By choosing physical or virtual (electronic) instruments, the composer can adapt any design to a specific compositional idea based on a particular group of instruments and/or voices (potentially also dancers).
- **Global, “top down” designs pre-define the syntactic outline of the composition, but only indirectly its form and semantics.**
- To bring the design to life, the composer specifies how a chosen set of instruments interact with each other over time, and what performers are to do at a specific point in time.
- The composer can create two different kinds of scores: acoustic (for instruments and voices) and electro-acoustic (for electronic instruments sounded by computer software).

Numerical Proto-Score of "Vocalise" (1982) for Soprano, Cello, and Percussion

I

2-3 = voice, 4-5 = cello, 6-9 = percussion

#1, 2, 3 TC = voice

separate control for voice register

#	metre	tone color	harmony	(sequence)	register	dynamics
1	V 1.4	V 8	E		V 4	V FFF
2	1.4	V 5	DIS C D CIS AIS P	2 1 6 4 3 5	V 1 1 1 1 1 1	F
3	1.4	7	PIS A G	2 3 1	V 3 3 3	P 1.7 1.5d
4	1.4	①	GIS		V 2 / 1.5	K MF
5	1.4	V 9	H		K 1	MF
6	1.4	③	DIS P AIS C	3 4 2 1	K 3 2 4 2	MF
7	1.2	②	H		K 4	V FF
8	1.2 2.5d	V 6	G A	2 1	K 1 3	FF
9	2.5	4	GIS E	1 2	V 2 4	FF
10	1.8	V 9	PIS P	1 2	V 3 1	FF
11	2.5	①	CIS		V 3	FF
12	1.3	7	CIS C	2 1	V 2 1	FF
13	2.5	⑧	GIS		V 4 / 5.1	K FF 1.9 2.2d
14	1.3	K 4	AIS		K 1	MF
15	5.8	4	A P	2 1	K 4 4	FFF
16	3.8	4	G 1 FIS	2 1	K 3 3	P
17	2.3	4	D		K 2	RP
18	1.8	K 2	E		K 2 / 6.35	PPP
19	1.2	②	GIS G DIS	2 3 1	V 3 4 1	V FFF 1.9
20	1.2	②	P E	1 2	V 3 2	P 2.0
21	1.2	K 1	C H AIS PIS	4 1 2 3	V 1 4 1 1 4 / 7.3	MF
22	1.2	①	D CIS A	2 3 1	K 2 2 2	F
23	1.2	①	CIS C A	2 1 3	K 3 3 3	MP
24	1.2	K 9	E		K 1	PPP
25	V .0	K ③	P GIS P DIS PIS	2 4 3 1 5	V 2 2 2 2 2	PP 5.6d
26	.0	3	C CIS E (A)	4 1 3 2	V 3 3 3 3	K MF 33
27	.0	V 8	GIS P	1 2	V 4 4	MF
28	4.5	⑧	H		V 2 / 6.4	MF

Poem: The Bitter Chalice

Turning Numbers into a Musical Score

- The table of numbers produced by Project One for me encodes *musical knowledge*.
- My compositional decisions are local but the design on which they are based is *global*; I am working “top down”, from stipulated design. Or, to speak with poet Charles Olson, I am working within a FIELD.
- In *Vocalise*, I was working with a poem of mine using 9 instruments (tone colors) assembled in 3 single-member groups (soprano, cello, percussion);
- The 7 columns of number represent the following musical parameters: event no., meter, tone color (instrument or voice name), pitch, pitch sequence, tone height (register), and volume (loudness).
- Duration is a free parameter, entirely determined by me.
- *I have assigned instrument nos. 1-3 to the voice (soprano), 4-6 to the cello, and 7-9 to percussion instruments. (I could have done this differently, of course, so that the same computer output would lead to a different compositions...).*
- *I am working with 4 registers (tone heights), and have defined them separately for each instrument according to what I know about its range).*
- *The first tone, e, falls into the cello; subsequent tones all fall into various percussion instruments, to be used according to my musical judgment; the voice only enters in bar 3.*
- **When musical sense requires it, I will make slight changes, but only if absolutely necessary. Otherwise, why am I using a computer program?**

Resulting Instrumental-Vocal Score

VOCALISE
(1 9 8 2)
for Joan Heller

♩ 52-56

5

2/4

Voice

mf *ff sempre*

Dri - nk

Cello

sp molto vibrato *3* *ord.* *ord.* *pizz.* *arco st.*

fff *f* *fff* *mf* *ff* *p*

Marimba Chimes

mp subito *mf*

Roto-tom Snare Tenor

TUNE ROTOS.

Roto-toms

Wood Block Temple

T.bl.

Glock. Crotales

marimba mallets (medium cord) *3*

f *p* *ff* *mf*

Triangle cymbal tam-tam

Cym. *p*

Poetry

(ottolaske.com/poetry.html)

Although my prose poems represent less than 5% of my total German and English poetry, they fully align with the digital esthetic I have followed in music and the visual arts.

I refer to Charles Olson as the instigator of using a global design to create a set of 15 poems.

My first lecture
based on this ebook,
November 2014



NEW SYNTAX: A Premiere of Prose Poems by Otto Laske

Otto Laske will premiere a group of prose poems he wrote between 1988 and 1992, with the aid of a computer program. At that time, having written

poetry for 35 years, he saw in the software a welcome tool for freeing himself of the shackles of habit that had shaped several different styles of writing previously.

Following the reading, he will comment on how his writing of these prose poems in his thinking today relates to work he has done in other artistic media, foremost in music composition and the visual arts, and give some examples of the work flows he has established for himself aided by computer software.

Otto Laske, born in Poland and educated in West Germany, The Netherlands, and the US, has worked as an artist in poetry, music composition, and the visual arts. Most of his poetry is still unpublished. His musical works (recordings, scores, writings) are found in the "Otto Laske Archive" of the School of Music, Texas State University, San Marcos, TX. His digital visual work, situated between photography and painting, has recently been shown in Gloucester and Newburyport, MA, at the Beaumont, TX, Art League, and on the internet.



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HEALING GRAPHIC DESIGN

Olson on Projective Verse (1950): Poetry Writing as Breath Management

- Olson was concerned with “the laws and possibilities of breath”.
- For him, the energy in a poem stems from “syllables living on lines” as physical objects moved by human breath.
- He feared these objects were often overwhelmed by “lyrical interference” and “second thoughts”, -- outside influences on the poet’s writing.
- Focusing on the *kinetics of verse* and the principle underlying its creation, he wanted to re-establish verse as anchored in an energy field, and remaining unimpeded by syntactic and semantic conventions and “descriptive devices” (similes, analogies, metaphors).
- For this reason, he welcomed mechanical devices like the typewriter because they “throw a metric over the (energy) field” in which syllables and words are breathing.
- Devices like the typewriter give the poet the “stave and bar” of musicians, for the purpose of precisely indicating the location and function of elements in an esthetic energy field.
- As a musician, I knew what he meant.

Poetry as an “Energy Construct”: Projective vs. Non-Projective Verse

- Olson builds on the achievements of Pound, Williams, and Cummings whose work he considered as approaching his ideal of “projective” verse, in contrast to, e.g., Eliot.
- He says about Eliot: “In his listening he has stayed there where his ear and the mind are, has only gone from his fine ear outward rather than, as I say a projective poet will, *down* through the workings of his own throat to that place where breath comes from, where breath has its beginnings, where drama has to come from, where, the coincidence is, the act springs.”
- Olson maintains:
- “Verse now, 1950, if it is to go ahead, if it is to be of essential use, must, I take it, catch up and put into itself certain laws and possibilities of the breath, of the breathing of the man who writes as well as of his listenings”.

Updating Olson's Typewriter Through Work with Computers

- In 1988, having written poetry for 35 years, I decided to “update” Olson’s *typewriter* and *stave and bar* metaphors of poetry writing by using computer software (not just the computer keyboard).
- A fellow poet had given me a probabilistic *sentence generator* saying “why don’t you try it out ...”.
- In creating the new work I was thinking about, I wanted to be shielded from *lyrical interference* and *second thoughts*, and get directly to syllable and word as objects of human breath.
- The sentence generator I used, called *Prose*, “knew about” English syntax; it required me to answer two questions :
 - **Which words (vocabulary)?**
 - **Which word when (in sequence)?**
- My answers to these questions became the input to the *Prose* program.

Procedure

- In addition to choosing my vocabulary – about 100 nouns and verbs, adjectives and adverbs -- including some “privileged words” – I also had to define “phrase templates”.
- The phrase templates were sets of rules that determined, for each of the poems in a set:
 - The proportion of nouns to verbs
 - The proportion of adjectives and adverbs
 - The range of line lengths
 - The range of the number of lines
- This input was used by the probabilistic sentence generator to generate a specific output.
- The output could only be accepted or rejected.
- Any manual editing of it would be the task of the poet.
- Such editing had to be slight because if it were to become excessive, why use a computer program?

Sentence Generator Output and the Poet's Edits

Computer output was in the form of single unbroken lines, without punctuation

as the wheel etches the seething horse across
an olive grove I overturn the turbid day
feeling a hell of sunshine on my back
skin has shivered in fear of the king loss has mounted
therapy stretches me toward my shadow and its tone is stating loss

Poet's "Musical" Edits

*As my wheel is etching the seething **hearse**
across the olive grove, I overturn the turbid **road**,
feeling a hell of **prayer in my bones**.*

*Skin has **returned to** fear the king. Loss has **spoken**.
Therapy **hopes my shadow towards the letter**, and
its tone is stating **chance**.*

Software-Based Poetry Writing

- The future of software-based poetry writing is slim, even if every poet uses a computer keyboard.
- This is because “writing” is closely tied to the artist’s life history and idiosyncratic frame of reference which lie far beyond grammar.
- However, using sentence generators and the like is a valuable “cleansing device” for poets who feel they are being buried under historical conventions, including their own.
- Software-based poetry writing is good practice for regenerating a poet’s use of breath in writing.
- It is a tool for making poetry *projective* rather than having it consist of wall paper patterns sitting on a page soaked in lyrical interferences.

Visual Art

(www.ottolaske.com/gallery.html)

My work in the visual arts is an off-shot of my work with global designs in music composition.

As Gertrude Stein said, it is composition that makes everything different.

In my animations, I have pulled together all of the three fields I have learned to master. My animations have also yielded the “negatives” on which my visual work is based.

I think of my visual work as “frozen music”.

OTTO LASKE

Solo Show

Digital painting



September 10 — October 12, 2014

Artist's Reception

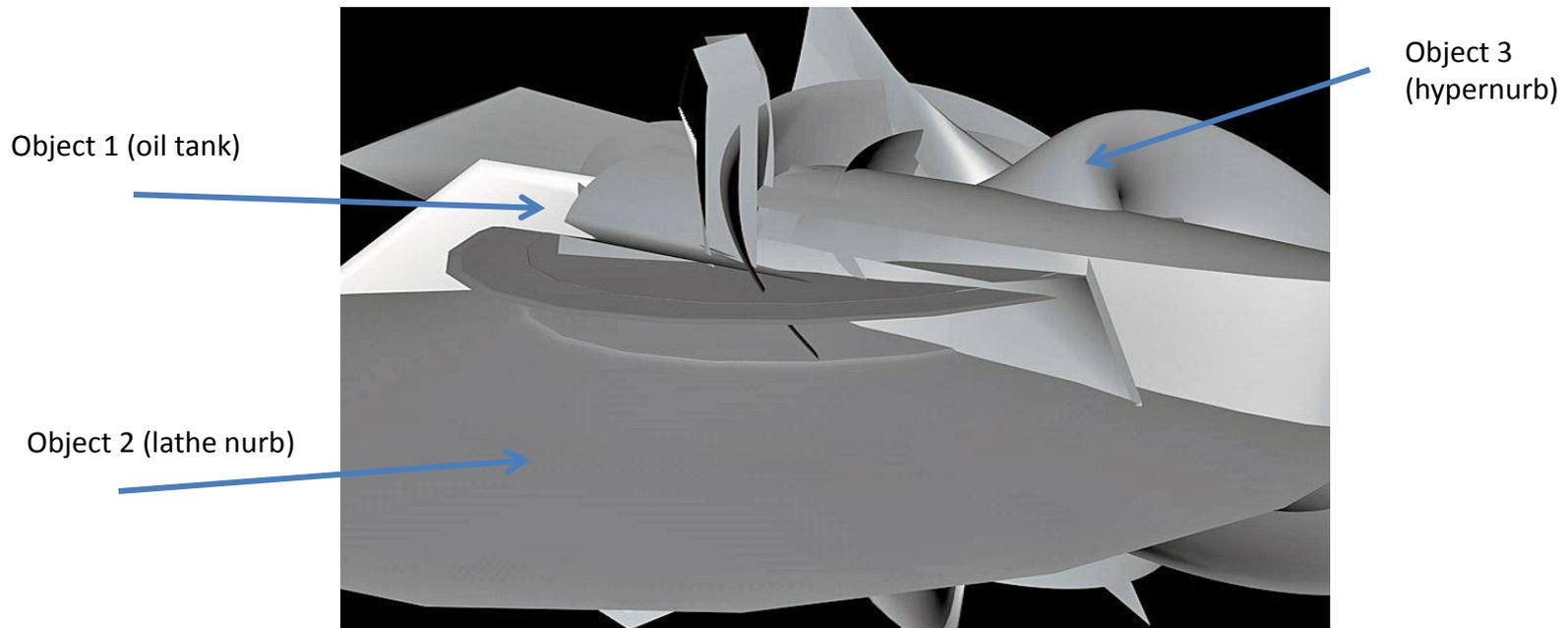
Sunday, September, 3:30 – 5:30 PM

The Firehouse Center for the Arts Gallery
open Wednesday - Sunday, 12 noon to 5 PM

Animations as a Framework for Digital Photography and Painting

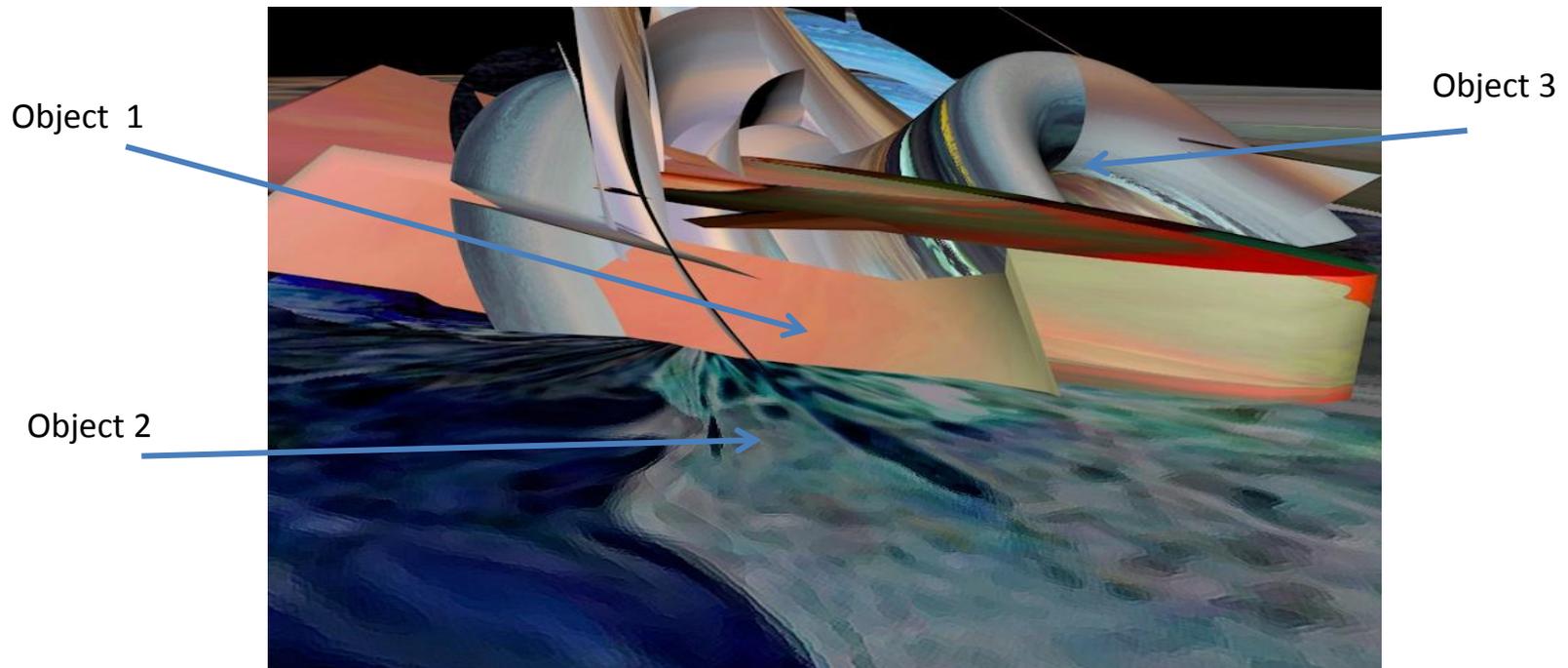
I was led to making animations as **visualizations of my electro-acoustic music** (1966-2009). Individual frames taken from my animations became the “negatives” on which I base my work in the visual arts. This art is musically inspired throughout, focusing on flow, tension, conflict, movement.

Below are seen three animation “objects” each of which can carry a visual image, or even a sequence of images. As the images move against and through each other over time, their shapes, colors, and textures follow the flow of the music.



An Animation is a Moving Constellation of Pixels

Once the objects on which the animation is based carry different images, the images will move (with the objects) against, through, over, and under each other; in addition, the image carried by a single object can gradually merge into other images, dissolving over time.



An Animation Still

Is a Set of Visual Parameters Called Pixels

- I treat an animation still as the *visualization of a set of pixel-level parameters* that define the shapes, colors, textures, and dynamic characteristics of an image. (In contrast to work in music, these parameters are not typically made available to the artist in terms of numeric values in such a way that s(he) could design work abstractly, top-down, in the sense of Koenig's *Project One*.)
- By working with computer software (Cinema 4D; Studio Artist; Photoshop), I can derive from a single animation still a large variety -- potentially an infinite number -- of images.
- Each still thus potentially represents a *set of images, or even an image sequence*.
- As a global design for creating image variants, any still I choose to work with is totally configurable to my purposes, depending on the software used.
- I can create a set of variations by sequencing program operations intuitively.
- From a *set of variations* of a still, I can then select optimal outcomes, and repeat the derivation process.
- I need to know when to stop.
- I am increasingly “seeing better”.

My Options

I can work on an animation still in multiple ways, in a sequence chosen by me (experimentally), in close interaction with my software *Other*:

- (1) refine the still through image manipulation techniques
- (2) paint into it with self-defined brushes
- (3) use it as a template for a new painting whose shapes, colors, and textures it informs to a degree I am controlling
- (4) create any number of variants of the still and even merge them
- (5) do two or more of these things in a particular sequence
- finally, in a cyclic process, (6) use the created image(s) in a new animation.

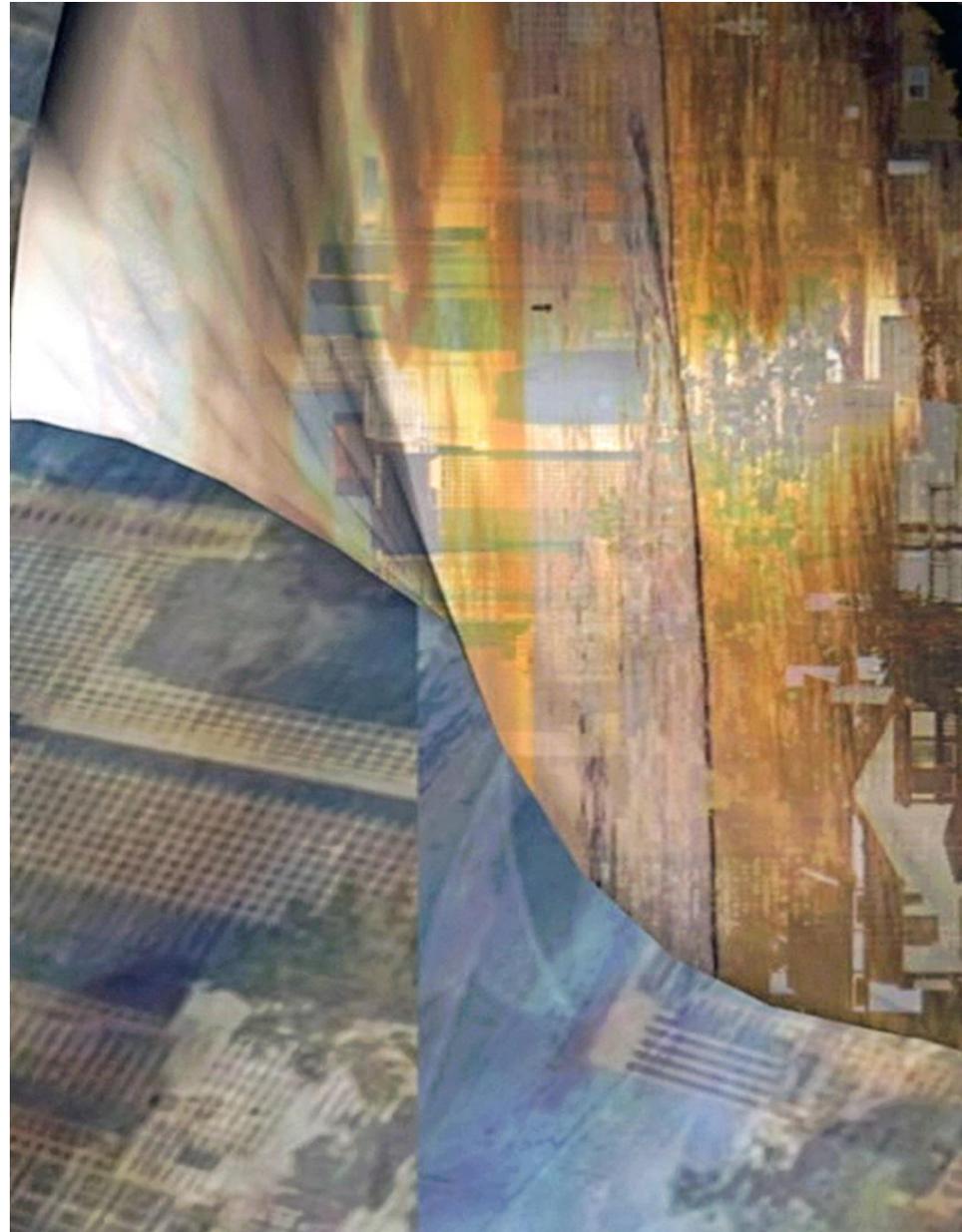
Example 1: Painting Into an Animation Still

**Animation still from
*Farewell to Los
Angeles (2011).***

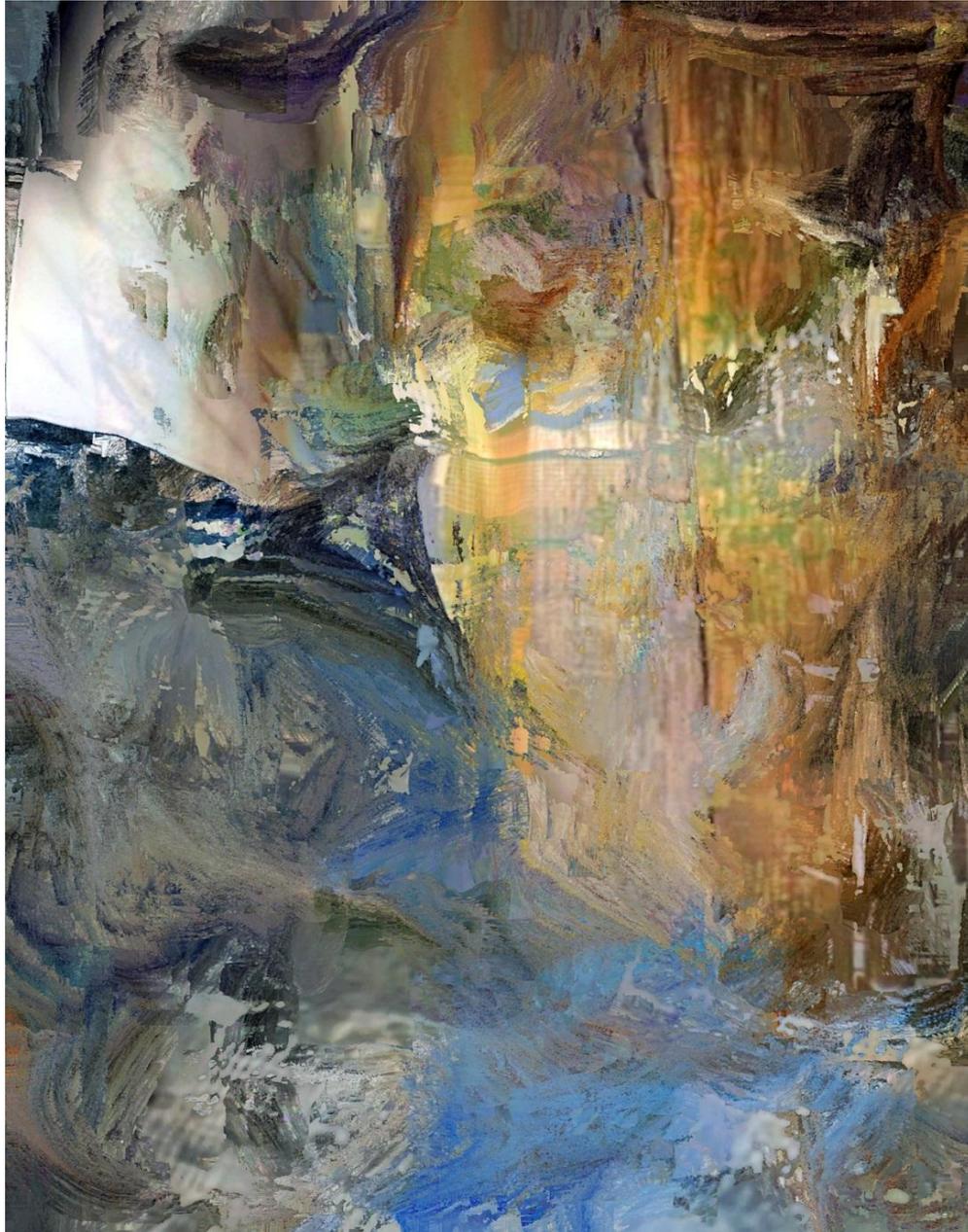
Images for producing this still were taken from the internet.

The image combines two distinct images of Los Angeles which have been put on 2 different animation “objects”.

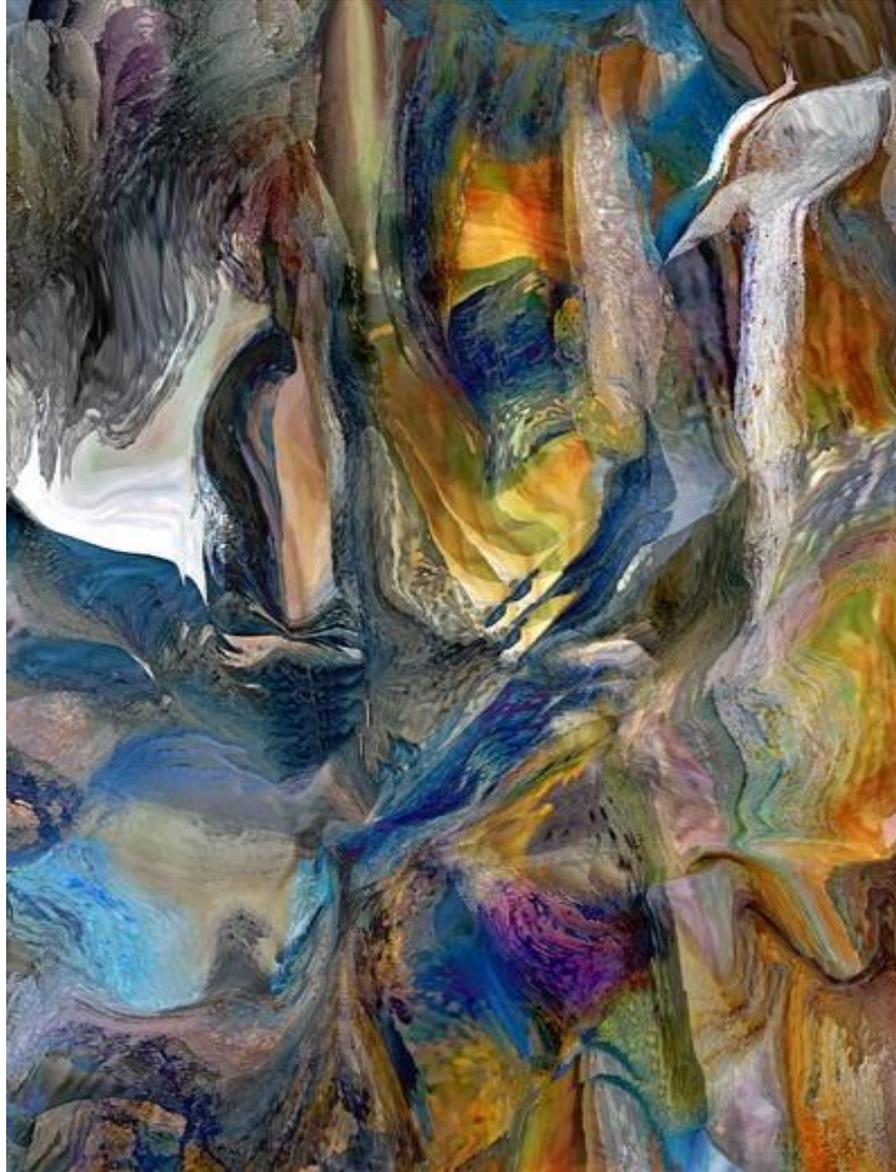
In addition to finding this still to be an interesting image, the still is the representation of visual parameters that determine shape, color, texture, and flow of the work I want to create.



Definitive Work:
The Creation
No. 2 (2014; 37x32)



Definitive Work:
Bird Clearing the Doom
(2014, 20x15)



**Example 2:
Sketching and Painting
Based on an Animation Still
(Not Itself Seen in the Resulting Image)**

First Sketch (use of different brushes)



Definitive Work:
From Arabian Nights (2014)

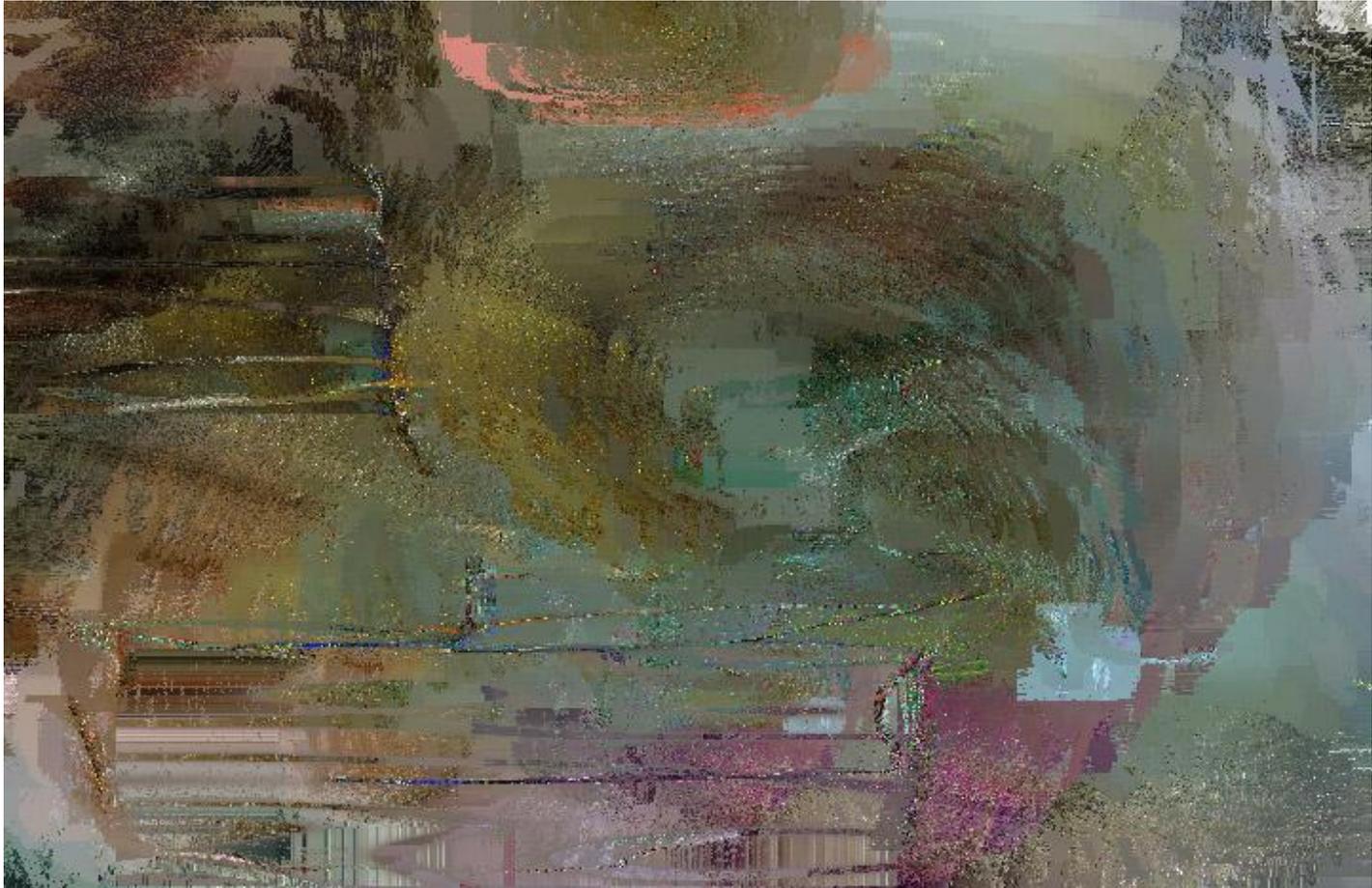


Example 3

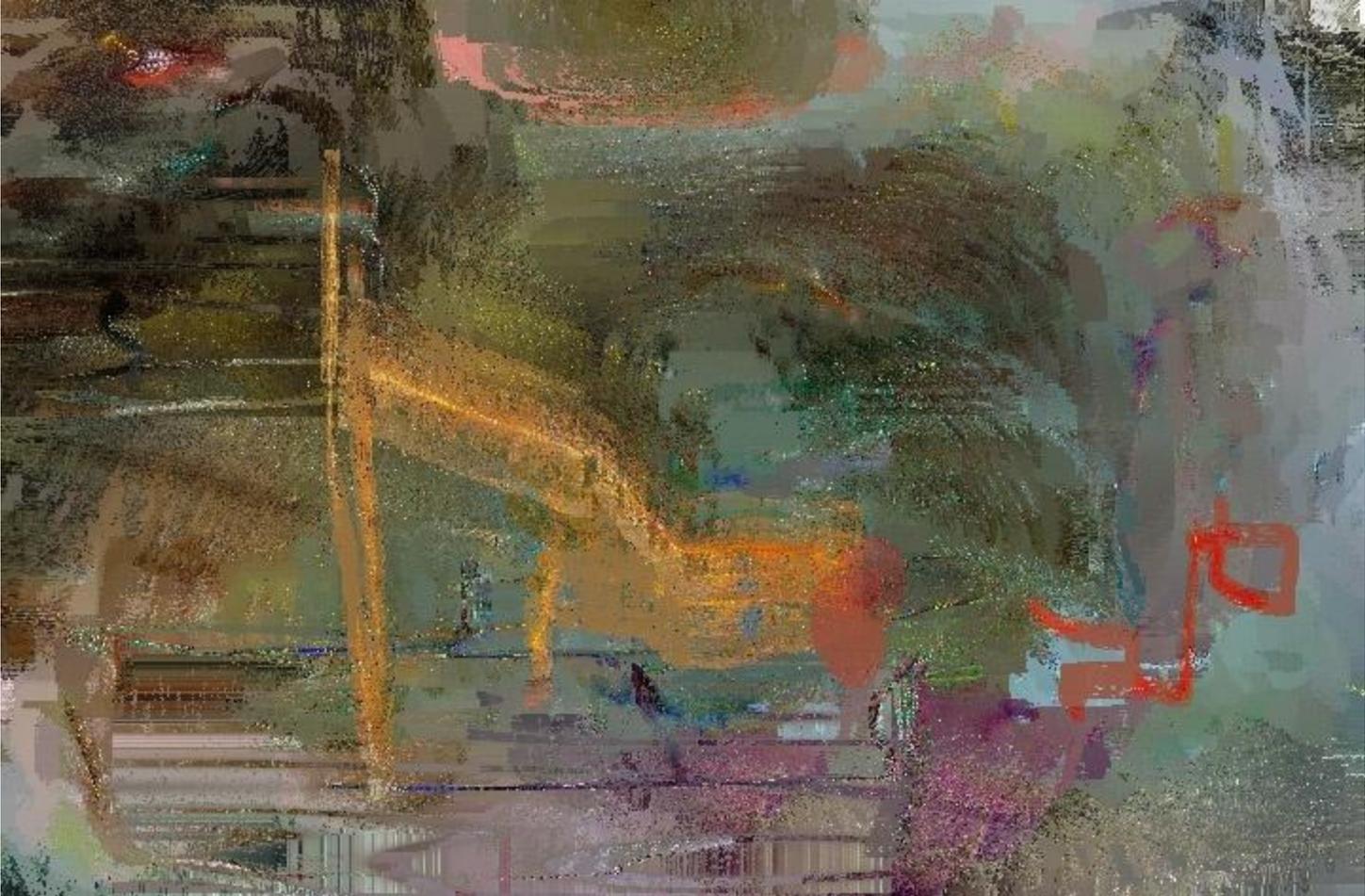
Painting Based on an Animation Still with Interspersed Image Manipulation

Here, a painting is being developed over time.

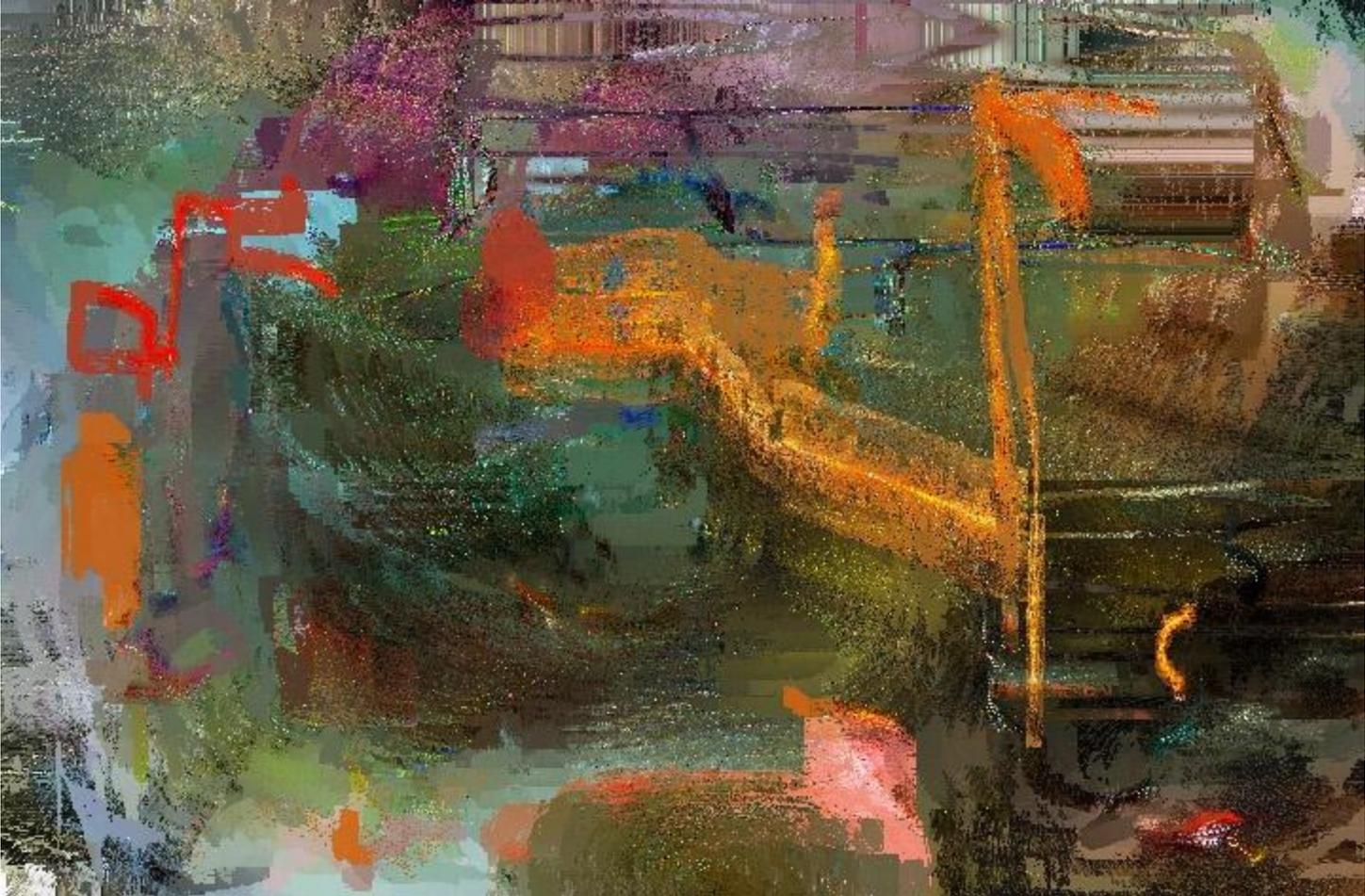
Painting sketch 1 (animation still
serving as a model, but hidden)



Painting sketch 2



Painting sketch 3 (including rotation)



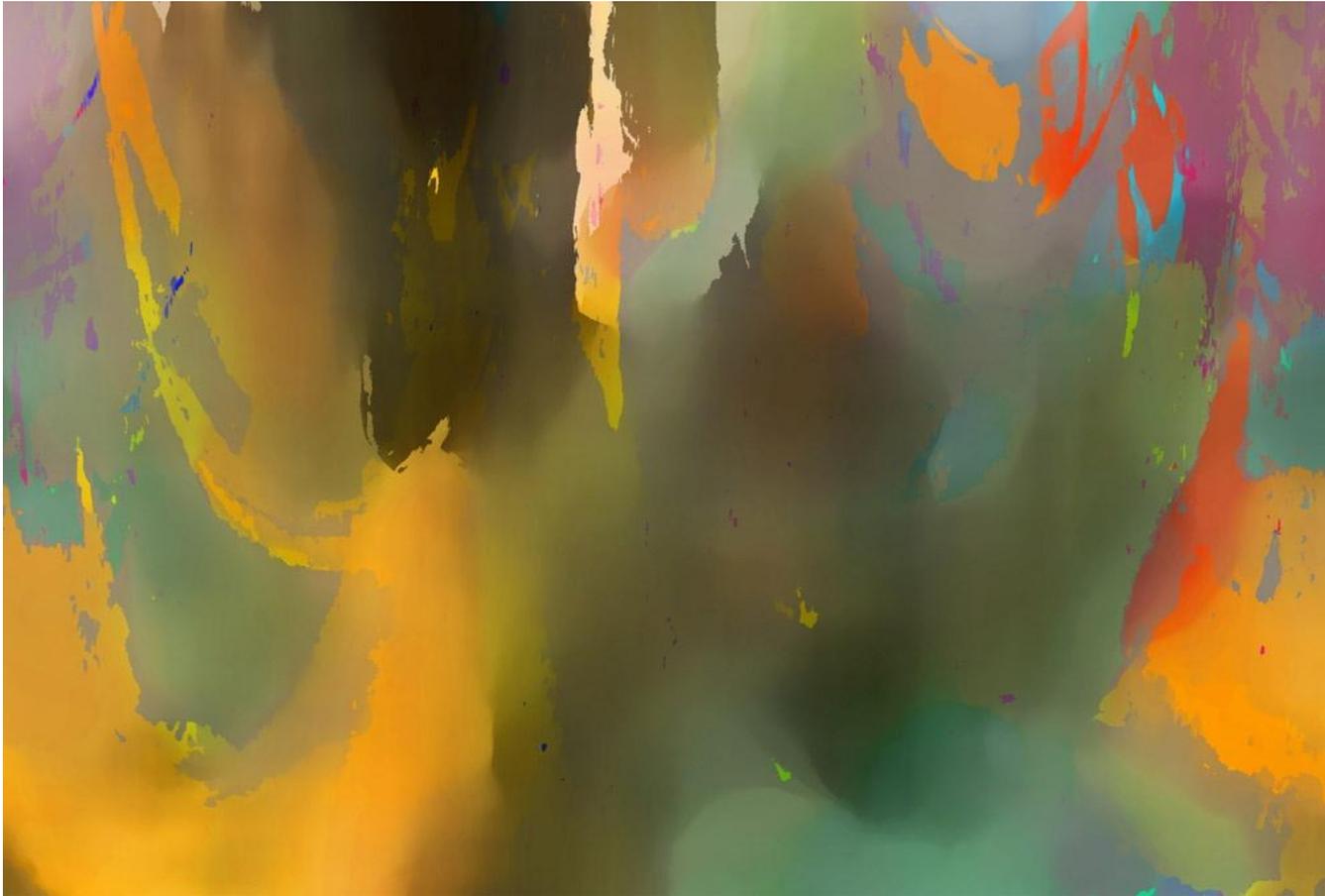
Painting sketch 4 (image manipulation 1, painted into)



Painting sketch 5
(image manipulation 2)



Painting sketch 6
(image manipulation 3, not used)



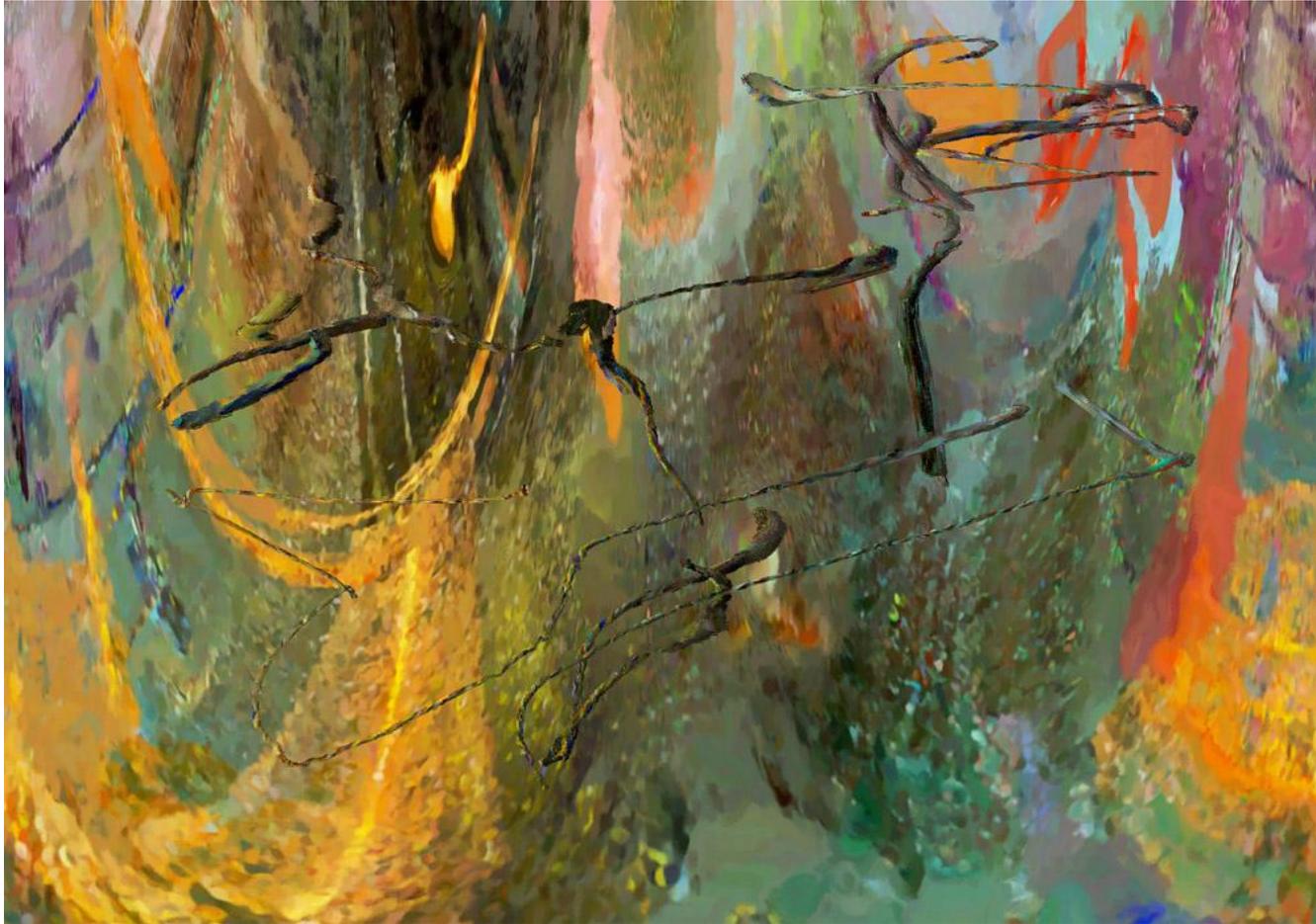
Painting sketch 7
(image manipulation 4)



Painting sketch 8
(painting into image manipulation 4)



Painting sketch 9
(continuing to paint into image manipulation 4)



**Definitive Work: *Forêt Enchantée*
(*Enchanted Wood*)**



Outlook

- I foresee that more and more artists will work between and beyond institutionalized artistic boundaries, in a trans-disciplinary way, with the aid of software.
- This can easily lead to amateurish results.
- In combining artistic disciplines, one needs to know the disciplines whose boundaries one is crossing.
- To work across domains, one needs to have a **mind**, rather than mere competences.
- In my experience, one can develop such a mind by working based on global designs in different esthetic disciplines.

END OF SHOW