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Artist: Kenji Kojima
Techno Synesthesia: The Sound of Archway
http://kenjikojima.com/indexList.lc

Techno Synesthesia Concept:
Can you listen to colors? "Techno Synesthesia" proposes the art
of synesthesia by computer technology. A computer technology
reduces any sensory data to binary. The binary turns into other
senses. Binary transcends the barriers of the natures that
sensibilities have. 0 and 1 are a new art material for 21st-
century artists. Synesthesia is the perception phenomenon that
can feel a certain sense of other senses. My artist's mind feels
audio and visual are no boundaries between them. Some people
with synesthesia can listen a color. But I am not that kind of
persons. I cannot listen to colors and cannot see to sounds. My
sensory organs catch them separately. I always feel
dissatisfaction, when I see and listen to a multi-media visual
music which the creator mentions it is synesthesia. I raise
doubt about the relation of their visuals and sounds. I would
like to require reasonable theory or system that I can convince
relations between visuals and sounds. I would rather realize the
art of synesthesia by computer technology. I use binary for
cross-sensory. "Techno Synesthesia" is an experimental art.
Technically it uses computer science but might be closer to an
alchemy than a science. It is the fundamental studies of aware
of our surrounding that is the savage mind of the digital
environment, or the modest art trial of our tedious and
troublesome life. My recent project "Techno Synesthesia: The
Sound of Archway" caught nymphs of music who dwelled in archways
in Central Park, New York City. I have worked this concept of
artwork for 10 years. I used the project name "Techno
Synesthesia" since 2014.

Technical description:
"Techno Synesthesia" creates an artwork of visual and music. But
the music of "Techno Synesthesia" is not a composer's
impression. The music is composed of the visual data by the
computer algorithm. The technology of "Techno Synesthesia" is
based on the software RGB MusicLab which was programmed by the
artist Kenji Kojima. I developed it about 10 years ago. The
Techno Synesthesia artworks on this site are on the progress of
the technology of RGB MusicLab. The software RGB MusicLab
converts RGB (Red, Green, and Blue) color values of a still
image to chromatic scale (atonality) music. The program reads
the RGB value of pixels. One pixel makes a harmony of three

notes of the RGB values, and the length of the note is
determined by the brightness of the pixel. RGB value 120 or 121
is the middle C, and RGB value 122 or 123 is added a half steps
of the scale that are C#, and so on. The pure black that is R=0,
G=0, B=0 is no sounds. RGB MusicLab converts an image to a music
by the computer algorithm. Therefore the converted music can be
returned to the original image. You can download RGB MusicLab
from Kenji Kojima's Web site. However, video frames have a huge
amount of visual data. I can not use all the data of the video
images to musical notes. I developed a new software for moving
images named "Luce". This is not distributed to the public. The
software Luce works for a video file and for a live video cam.
Our sensibilities select instinctively appropriate data from an
enormous amount of information on the passing time. The visual
data have to be suppressed and arranged by the algorithm. It is
a kind of filter function. Probably there were many methods for
this purpose, but I took the comparing brightness on the
timeline. The program reads RGB color data from divided 84 grids
of a video frame and compares the brightness of each grid and
chooses some maximum different values than a second before (it
can control the interval sequence). Then the program converts
the color values to musical notes that are the same methods as
RGB MusicLab. Finally, the artwork video plays the music by midi
instruments with the environmental sounds of the archway video.
You can see the binary and the positions of musical notes in
white line squares on the video.

Historical Background:
"Synesthesia" and "Algorithmic Composition" are the main
backgrounds of "Techno Synesthesia". Techno Synesthesia is not a
physical extension of technology like a cyborg. It is a small
artistic step for expanding or merging of human sensitivity and
aesthetics by computer technology. Algorithmic Composition is
the technique of using algorithms to create a music. It is an
old composition method. Ancient Greece philosopher Pythagoras,
10th-century Italian Guido d'Arezzo who made a notation similar
to a modern music notation, and 18th-century Austrian composer
Wolfgang Amadeus Mozart were known. Mozart's "Musical Dice Game"
was unknown whether really he made it. Using a computer is the
most popular way in 21st-century. It was possible cave artists
might create the art of synesthesia. But I do not know the
history of them. I would like to refer to some synesthesia
artists in the modern period. An early 20th-century composer
Alexander Scriabin was a synesthesia media artist. He wrote the
Luce (light in Italian) part on the score of his symphony
"Prometheus". The Luce was the color lighting part of the
symphony. He connected with musical keys to colors according to

his color system. The whole score of the symphony was hard to play by an old time orchestra. But you can experience the symphony including the Luce by a contemporary orchestra with computer technologies. An abstract painter Wassily Kandinsky expressed and theorized hearing tones and chords as he painted. According to Wikipedia, He theorized yellow is the color of middle C on a brassy trumpet, etc.. A poet Arthur Rimbaud wrote "Vowels" relations about vowels and colors. These artists had their own theories or systems between different senses. In the middle of 20th-century, many graphic notations were written for avant-garde musical compositions. However, in my opinion, an emotion or a spiritual mind could not be an agent between different perceptions. A graphic notation was the too vague method for the art of synesthesia. A color or pattern theory and sound system were important for persuading my aesthetics. The input of color or figure data should be output the same musical note. Also, I am unsatisfactory for the same reason to the recent multi-media visual music. The art of 21st-century synesthesia should disclose theory and system. We shall discover and build the new art of synesthesia by using binary of computer science. Another reason for taking scientific methods is because I do not want to fall into mysticism. The algorithm of my project "Techno Synesthesia" takes RGB color value 120 is always the middle C as I mentioned in "Technical description" above. This system is based on my programming "RGB MusicLab". The edition "Public 1280x720" of my Techno Synesthesia videos are under Creative Commons License (CC BY-NC-ND 4.0).