

## **Extract on Synaesthesia from 'Design Report 2014 Part I & II'**

### **By Lewis CJ Allen**

In continuing themes, Synaesthesia is a neurological affliction when the stimulation of one sensory pathway leads to automatic, involuntary experiences in another when externally stimulated. In artistic terminology, to the same affect, Synaesthesia is fundamentally the cross over between two stimuli for instance, aural and visual sensory information. (see Figure 5) This continues many of the core ideas in the visual Music art of such artist as Henry Valensi. (see Figure 7) Artistic Synaesthesia, adjacent to the interdisciplinary work of Sound Art and Visual music, has been investigated since the early 19th Centenary but has boomed in the 21st. (see Figure 12, 13 & 14) Cytowic, Richard E. (2002).

"Throughout the nineteenth century, synaesthesia proved a staple first of Romantic, then of symbolic thought. Synaesthetic associations were thought to result from a heightened state of aesthetic awareness in the perceiving subject. Artists, writers, and musicians, in turn, sought to create works that would generate such associations for their audiences." Kerry Broughter, Olivia Mattis (2005). Visual Music. Hirshhorn Museum; Museum Of Contemporary Art: Thames & Hudson. Chapter: 'Visual Music'.

This combination of two elements supplies us with an intuitive method of conveying more information in a reduced time scale. The effectiveness of this method depends on how concise the information is, as with more information being shown to an audience in a smaller space of time means they have less of an opportunity to retain that information. With this in mind, it is possible that this modern approach to information dispensation can expand the potential of Audio-Visual arts in a manner that can be highly beneficial to specific groups of people if used in the correct context with accurate and easy-to-understand

materials (Kerry Broughter, Olivia Mattis 2005). Conversely, if the information is convoluted or

complex, the ideas being communicated will be lost within a sea of sensory data.

A current example of basic synaesthesia is the music album. (see Figure 6) The album has always been a piece of packaging that appeals to a target market on a visual and aural plane; the album art work appealing to the eyes and the album content appealing to the ears. From a consumer's point of view, and as a visually aware person, it can be noted that when confronted with a wall of albums in a store (see Figure 14) we are first faced with the image, or 'surface value' of the album, being influenced by colour choice, imagery and the image of the artist, typography and layout. In opposition to this, once this process of visual selection is complete, the consumer has then to decipher the 'content'; the audio (Stanley Sacharow 1982). This brings forth the idea that these two opposing elements are, in fact, an artistic antithesis to one another. They are two polar forces that have been combined in order to make an effective marketing tool that encourages an audience to buy after the final reception of visual-aural data. It is here the contemporary combination of sound and image has introduced a greater influence on the target audience.

# ***Synaesthesia: Seeing Sound***

*Case Study - By Lewis CJ Allen*

The aim of this experiment is to prove the synergy between sound and image and that people can correlate sound with basic visual elements such as colour.

By using the theme of synaesthesia as a reference point, three stages of the experiment were implemented:

## **Stage 1:**

By breaking images down into binary code and BMP file format, they can be read by Audio software i.e C-Edit Pro. This investigation sampled primary and secondary colours - blue, red, yellow, purple, orange, green (See Appendix 1) and played the sounds of each colour to the listener with a blank screen. The listener then had to visualise and draw their interpretation of the sound.

Colour Sound Files:

<https://soundcloud.com/lewiscjallen>

This was an attempt to generate visual created by the audience that are their interpretation of the sounds they hear.

The Audiofile was kept constant as was the tool for making the images. All users were sent the following information:

“As part of my 4th year project on sound and image I'm doing a case study on how people react to sound.

Below you will see two links,

<http://www.queeky.com/app>

<https://www.youtube.com/watch?v=WQ8f2g1zodc&feature=youtu.be>

The first is to a "online Draw tool" much like paint.

The second is a link to an audio file on youtube.

If you can open the first link in a tab in your web browser and have a look at the "online draw tool" - you will see it has a variety of option like brush sizes, colours, fills etc

In a moment you can play the audio file in the second link.

This is experimental and is about personal perception, so it might seem a little odd at first. But during the experiment you can use whatever you like: any colour, any brush stroke, any fill etc.

If you could now please listen to the sound on the youtube file (you may wish to use headphones) and use the "online draw tool" to draw what you are hearing. This can be a colour, a series of dots and lines, curves, words - anything!

You can replay the sound as many times as you like until you feel as though you are finished. Take as much time as you need

When you are done drawing on the top left of the screen, go to File > Save to my computer

Then if you can either send it back to me on facebook

or send it to lewiscjallen@gmail.com with you name and age please.

Thanks,

Lewis “

## **The Results:**

See appendix 2

What is noticeable among the majority of images in this set, is there is a use of colour. The subject chose to use colour indexes over grayscale or black and white thus reflected the hue of the actual tones sources – primary and secondary colours showing a positive correlation.

Furthermore, there is a strong vertical incline in all the work and quite linear movement from left to right. This is interesting as the pitch and frequencies actually decrease while the volume remains the same. This provides Negative correlation, but a relationship between the the sound and the results nonetheless.

## **Comments from those involved:**

"It was almost melodic, Like keys in music but not like any instrument I've heard. Then at the end its almost like they come to gether, to form new tones." **Jean McLean, 50**

"I heard Seperate tones then the tones merging together with cracks and pop and other interferences" **Lucy Kinnarid, 22**

It reminded me of the sound of blood pressure when I use the esfingomanometer, the red of the heart and blood. I heard it increase dramatically over time... then nothing. **Joshua Pajuelo, 25**

"It had both dull and intense tones, so I thought I would mirror that will dull and intense colors." **Aaron Simpson, 25**

"They made me uncomfortable, the tones were so high. Though I heard a variety of tones and i tried to show it in the change of colour." **Charlie McLean, 52**

"It sounded dark and eerie. I listened 10 times to try and gauge all that I could hear. It was like pulses of sound." **Brian Moylan, 29**

## **Stage 2:**

The Secondary Part of the experiment took the user created images and combined them with the image they had heard in Stage 1.

This is taking the visual actuality of the sound and the visual interpretation and combining them in Photoshop. Each Image is Set as and Overlay at 50% opacity; infusing the reality with the person translations of sound and image.

(see Appendices 3,4,5, and 6 for examples of the outcomes)

## **Stage 3:**

The Tertiary stage involved taking the combined images from stage two and feeding the information back into the studio editing software and letting the binary sound effect the visual; sonifying the images in order to complete the audio-visual loop:

Image > Sound > Image > Sound > Image > Sound > Final image.

Colours > Virtual sound of colours > User Interpretation > Virtual sound of Interpretations > Combined Image (Original "colours" image in Appendix 1 and Interpreted images) > Applying Virtual sound of Interpretation > Final Image.

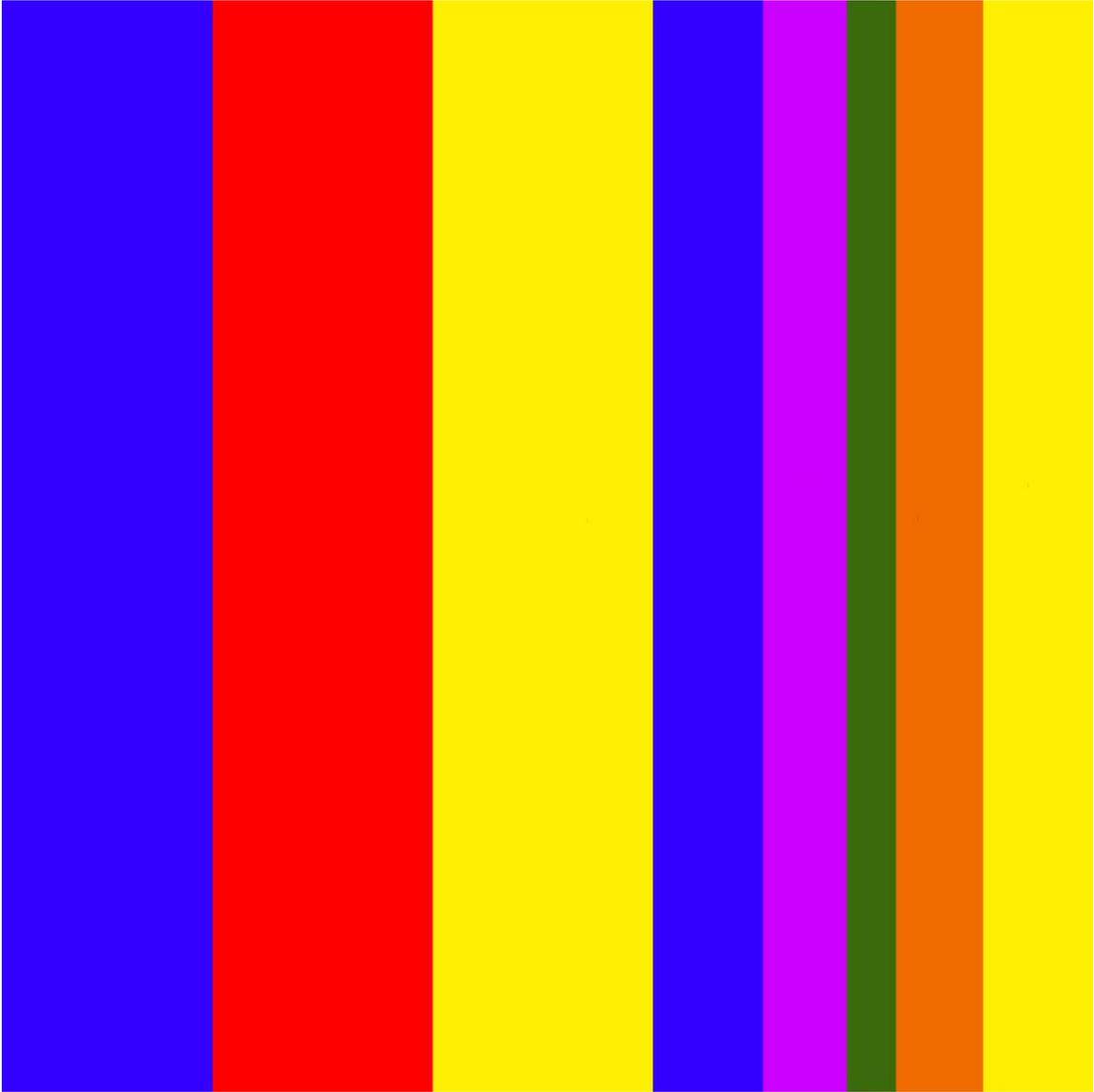
See Appendices 7, 8, 9, and 10 for final image examamples)

Virtual sound of user Interpretations:

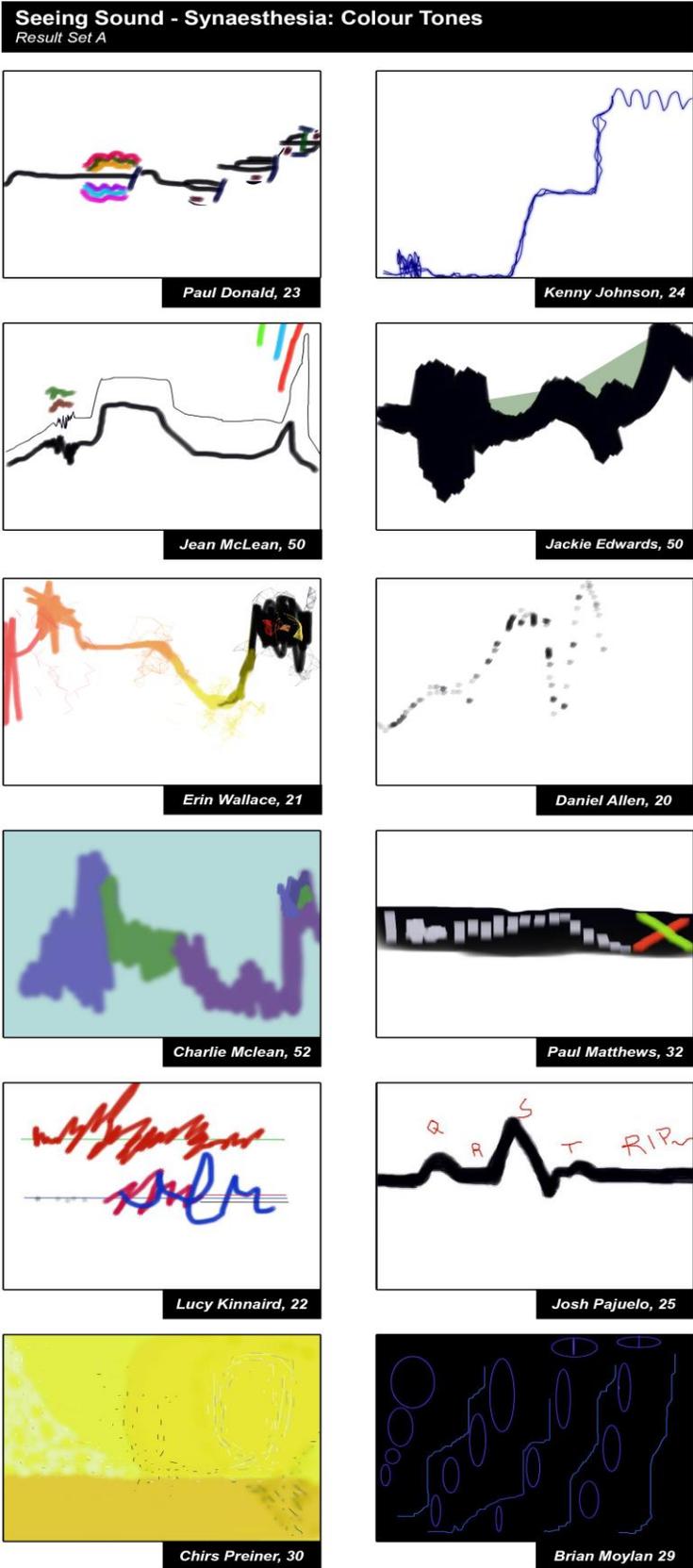
<http://goo.gl/hxtkd5>

See Appendix 11 for timeline of image development.

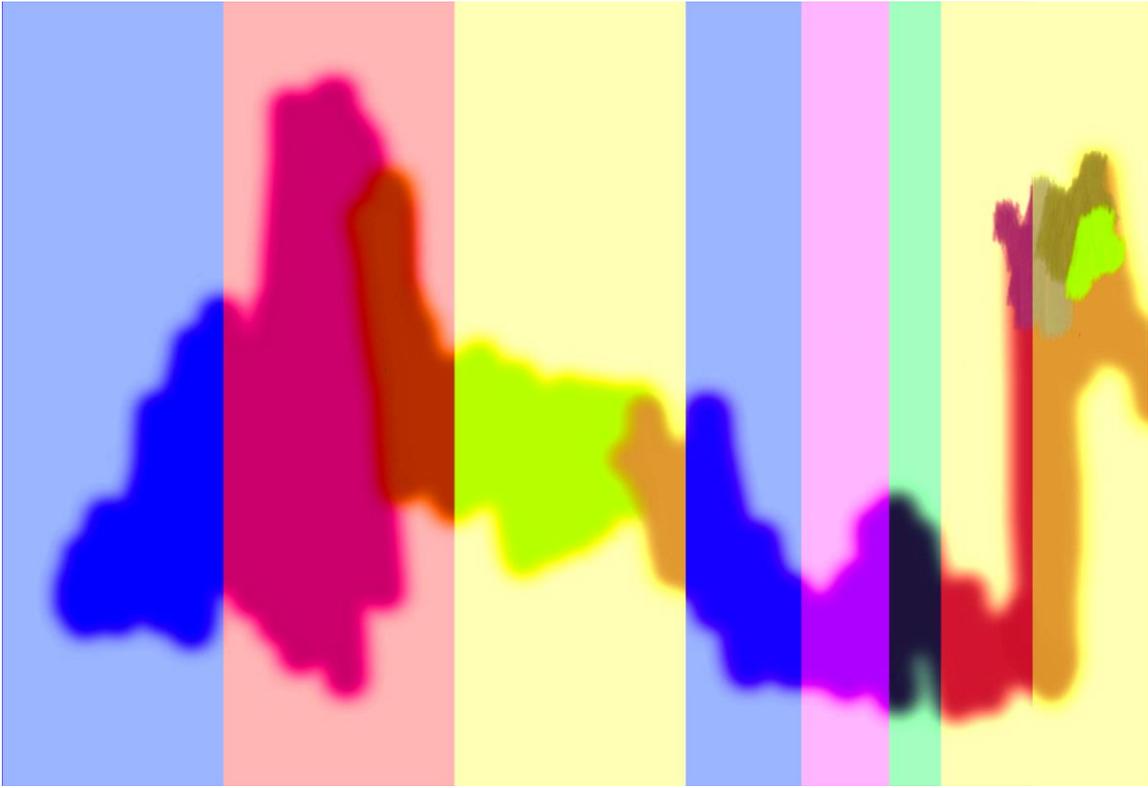
**Appendix 1:**



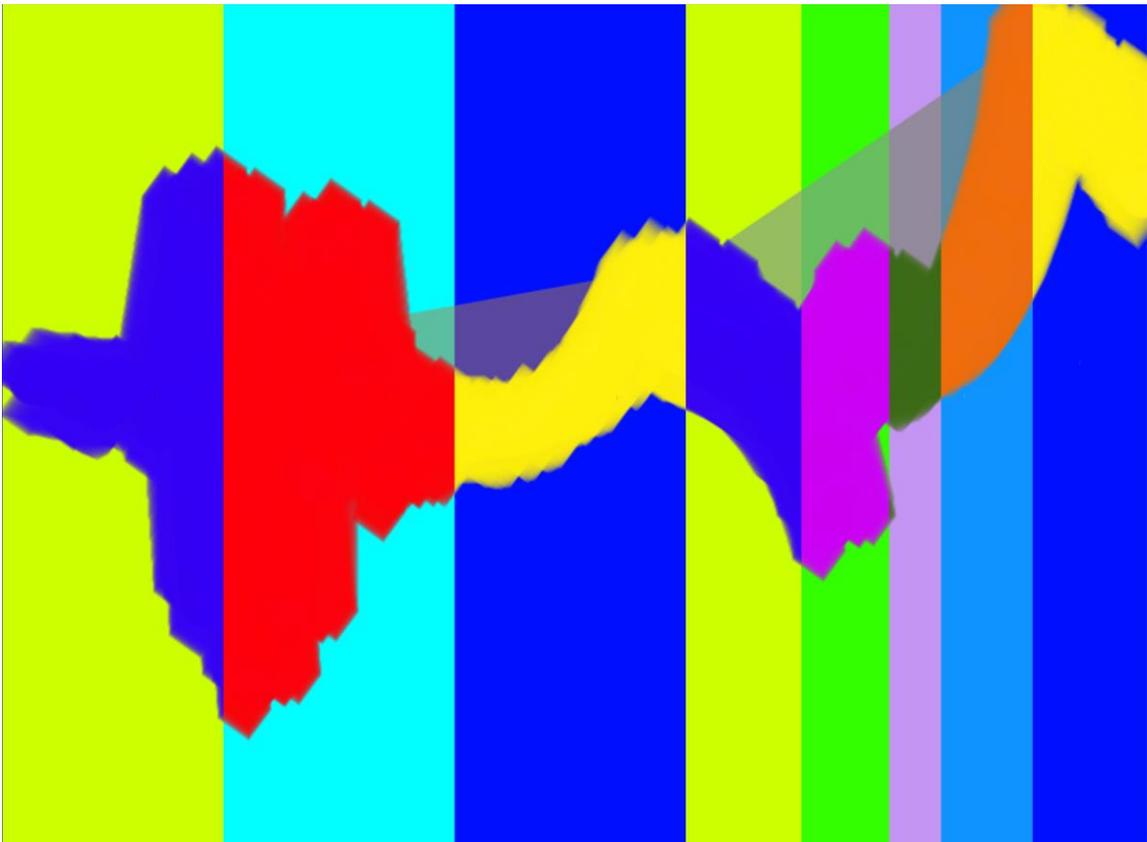
Appendix 2:



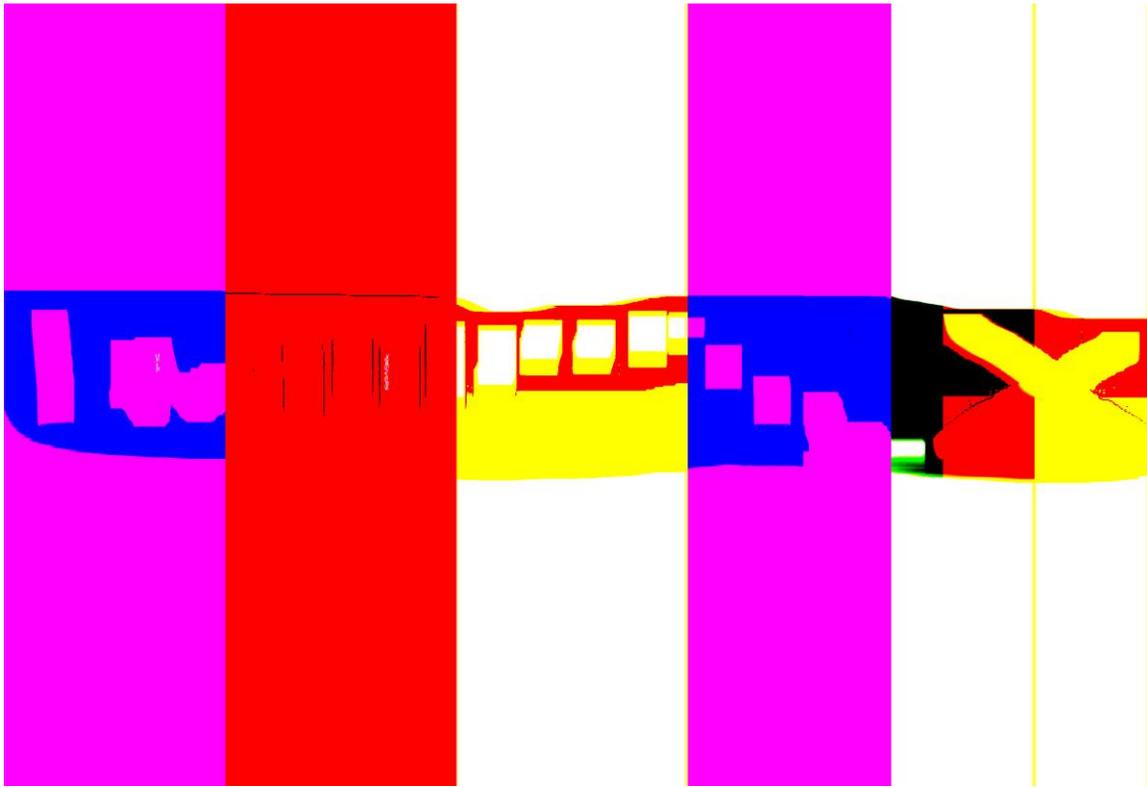
**Appendix 3:**



**Appendix 4:**



Appendix 5:



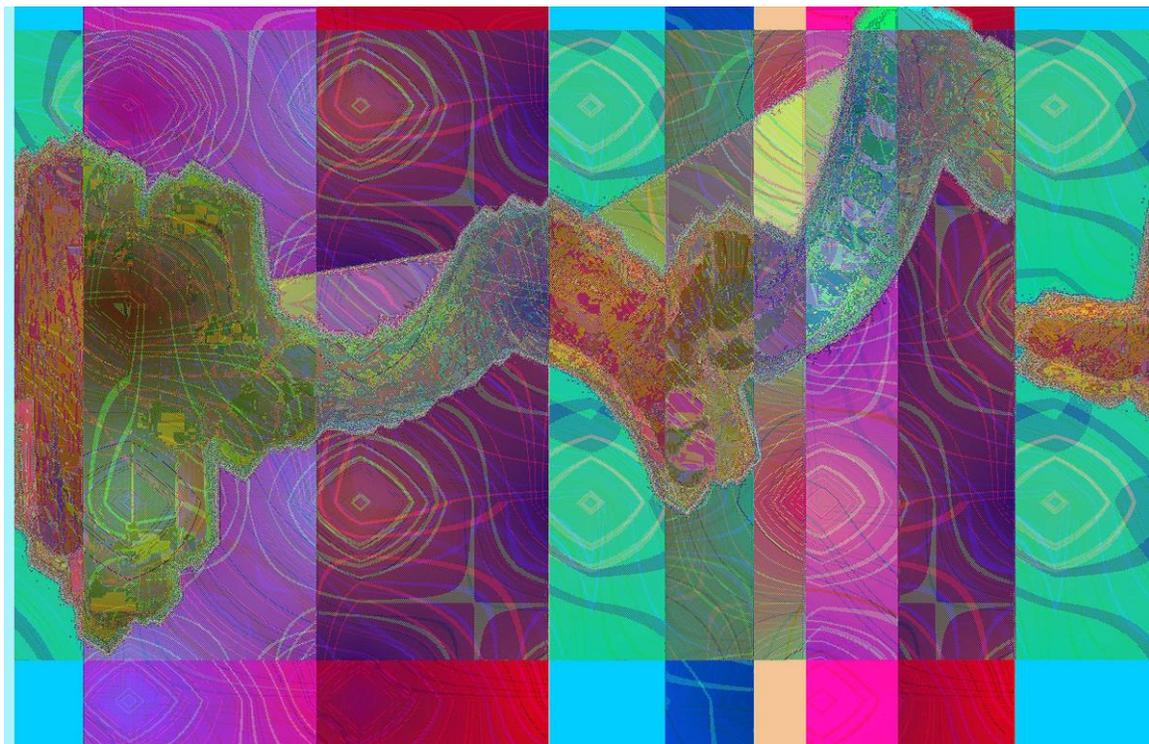
Appendix 6:



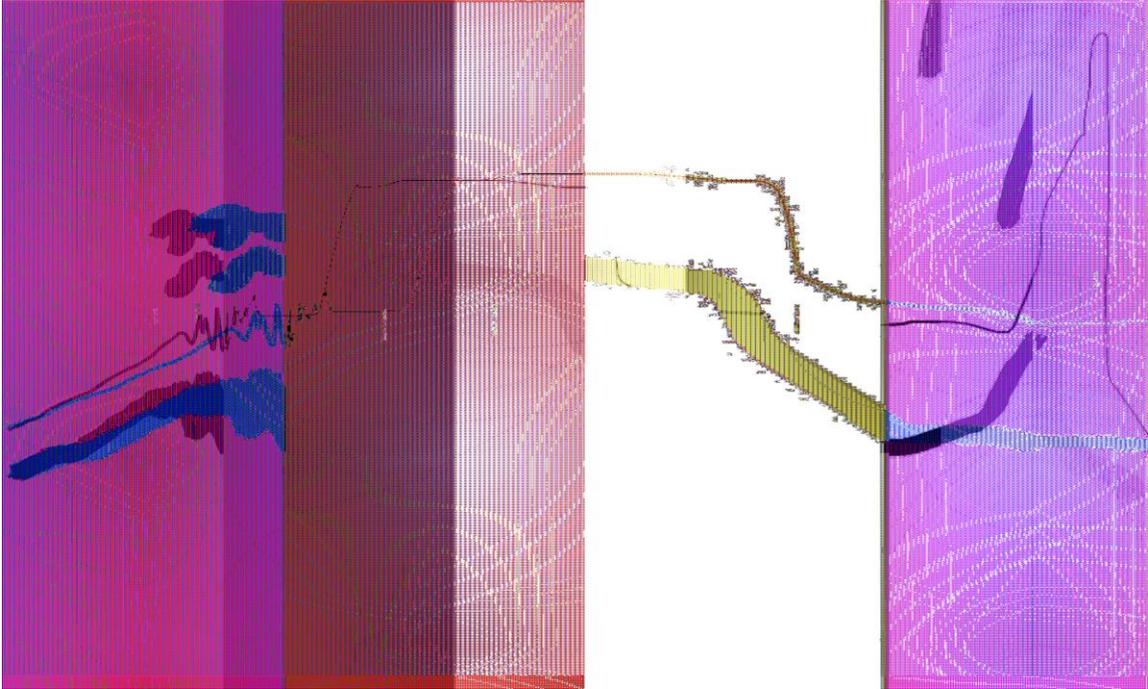
**Appendix 7:**



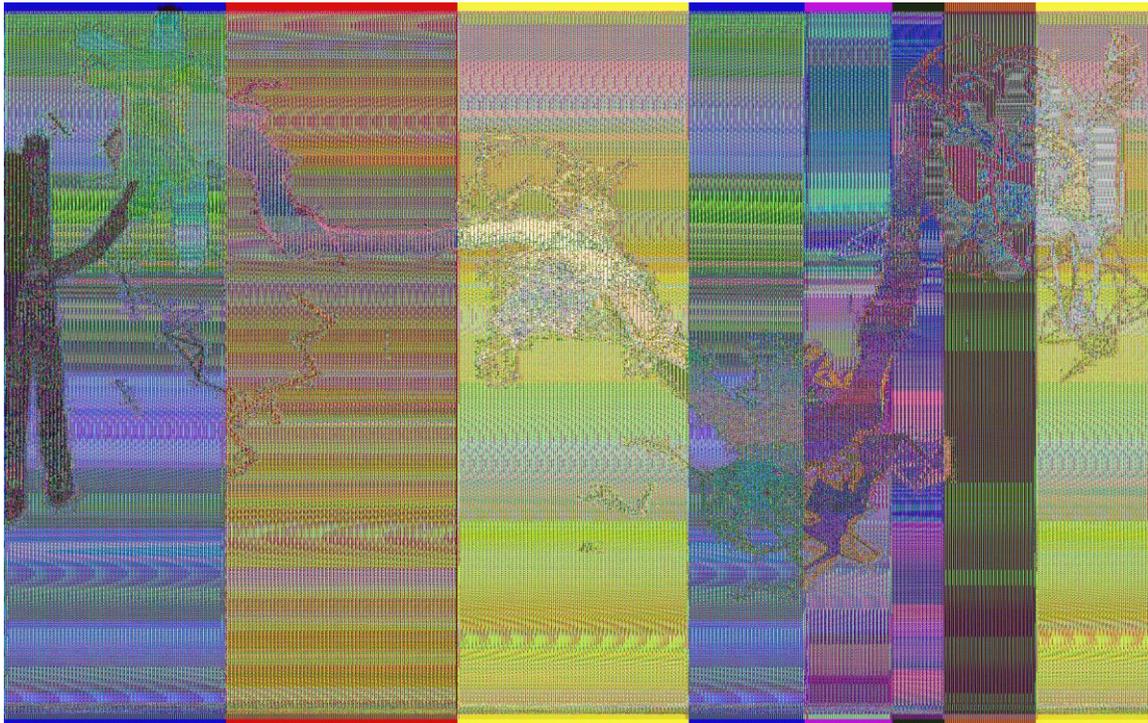
**Appendix 8:**



**Appendix 9:**



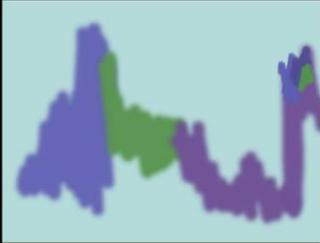
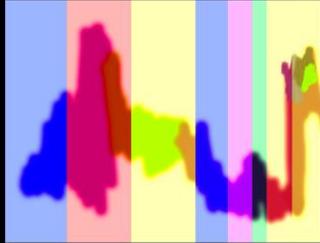
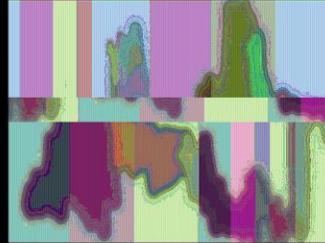
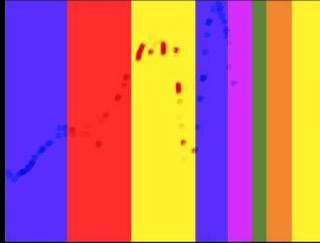
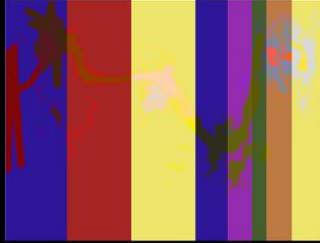
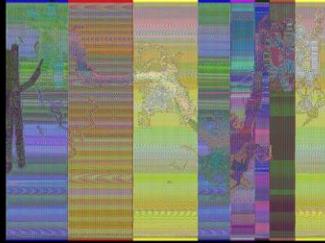
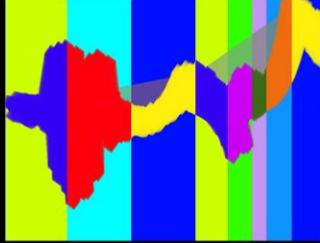
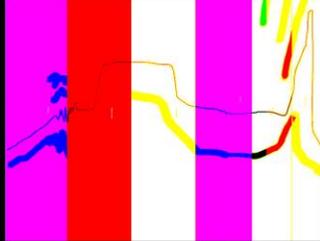
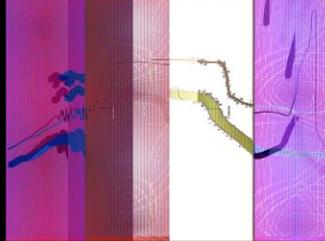
**Appendix 10:**



Appendix 11:

# Synaesthesia: Seeing Sound

## Result Table

	Original Interpretation of Sound	Interpretation & Actual Image Combined	Combined Image Sonified
<i>Charlie McLean, 52</i>			
<i>Daniel Allen, 20</i>			
<i>Erin Wallace, 21</i>			
<i>Jackie Edwards, 50</i>			
<i>Jean McLean, 50</i>			

## **References:**

Cytowic Richard E 2002 Synaesthesia A Union of the Senses Cambridge Massachusetts The MIT Press

Kerry Broughter, Olivia Mattis (2005). Visual Music. Hirshhorn Museum; Museum Of Contemporary Art: Thames & Hudson. Chapter: 'Visual Music'.

Stanley Sacharow 1982 The Package as a Marketing Tool Pennsylvania Chilton Book Company

**Figure 5:**

Synesthesia 2.0 by Daniel Temkin

Mark Wilson. (2012). Synesthesia 2.0: Digital Images, Distorted By Sound Waves. Available: <http://www.fastcodesign.com/1669501/synesthesia-20-digital-images-distorted-by-sound-waves>. Last accessed Dec 2013.



Daniel Temkin, (2013), Glitchometry #29 [ONLINE]. Available at: [http://danieltemkin.com/Glitchometry/glitchometry\\_29.jpg](http://danieltemkin.com/Glitchometry/glitchometry_29.jpg) [Accessed 30 November 13].

**Figure 6:**

Synaesthesia Example - The Album (Sound and Image)



Polydor Records, (2008), The Saturdays: Chasing Lights [ONLINE]. Available at: <http://www.the-saturdays.co.uk/2008/10/26/debut-album-chasing-lights-out-now/> [Accessed 20 November 13].

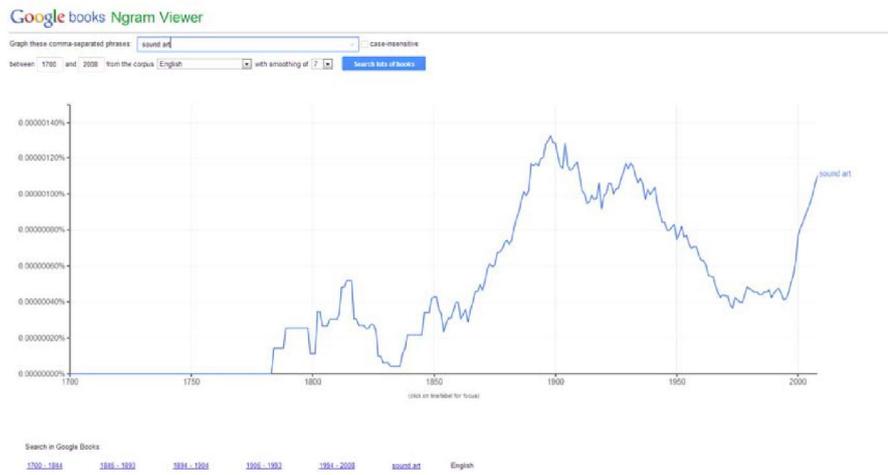
**Figure 7:**

Synaesthesia - Symphonie Verte by Henry Valensi, 1935



Kerry Broughter, Olivia Mattis (2005). Visual Music. Hirshhorn Museum; Museum Of Contemporary Art: Thames & Hudson. Chapter: 'Visual Music'. Symphonie Verte by Henry Valensi, 1935.

Figure 12:

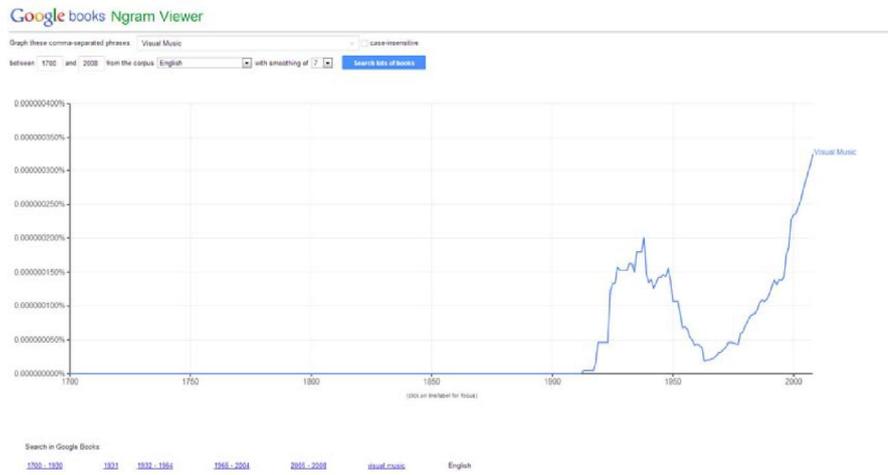


Use of the term ' Sound Art' in Google Books:

[https://books.google.com/ngrams/graph?content=sound+art&year\\_start=1700&year\\_end=2008&corpus=15&smoothing=7&share=&direct\\_url=t1%3B%2Csound%20art%3B%2Cc0](https://books.google.com/ngrams/graph?content=sound+art&year_start=1700&year_end=2008&corpus=15&smoothing=7&share=&direct_url=t1%3B%2Csound%20art%3B%2Cc0)

Last Accessed November 13.

Figure 13:

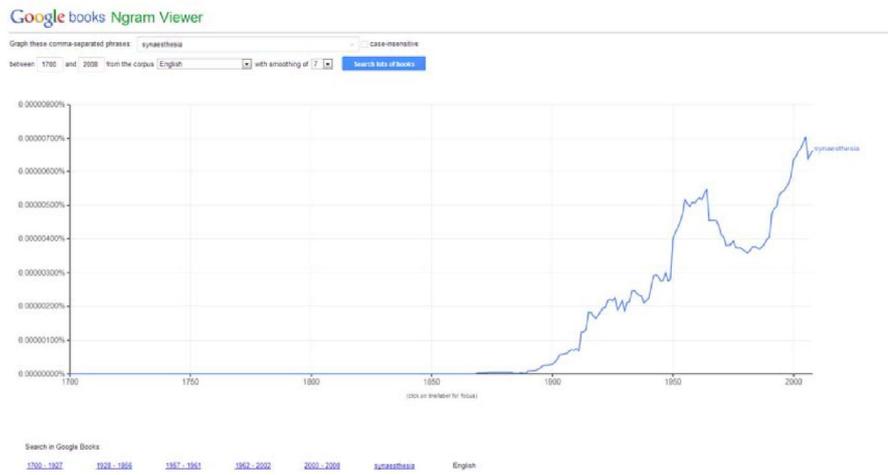


Use of the term ' Visual Music' in Google Books:

[https://books.google.com/ngrams/graph?content=visual+music&year\\_start=1700&year\\_end=2008&corpus=15&smoothing=7&share=&direct\\_url=t1%3B%2Cvisual%20music%3B%2C%20](https://books.google.com/ngrams/graph?content=visual+music&year_start=1700&year_end=2008&corpus=15&smoothing=7&share=&direct_url=t1%3B%2Cvisual%20music%3B%2C%20)

Last Accessed December 13.

Figure 14:



Use of the term 'Synaesthesia' in Google Books:

[https://books.google.com/ngrams/graph?content=synaesthesia&year\\_start=1800&year\\_end=2008&corpus=15&smoothing=7&share=&direct\\_url=t1%3B%2Csynaesthesia%3B%2Cc0](https://books.google.com/ngrams/graph?content=synaesthesia&year_start=1800&year_end=2008&corpus=15&smoothing=7&share=&direct_url=t1%3B%2Csynaesthesia%3B%2Cc0)  
Last Accessed December 13.