

Mathematics and Nature in Art

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*IB Visual Art I
nvestigation Workbook HLB*

Symbols, representations with meaning

During one of my first classes as an IB Art student, my teacher tried to inspire us and make us reflect upon what art meant in our life. To do so, he prepared a very surprising task which, although at first I may have believed to be very basic and simple, turned out to be quite difficult. In it we were asked to create a symbol or a logo for anything we chose.

At first, I was not at all impressed as I thought that since logos are usually very basic forms, the technical process behind them was rather pointless. However, as I started thinking, I realized one intrinsic element of the nature of almost any logo: it represents something; furthermore it means something to someone. I was astonished by this finding. Therefore, if I was unable to think of anything I wanted to represent, I would not be able to create a logo that would actually please me as a final result. From this apparently simple task, I was led, for the first time, to do research as a way to inspire myself in art. This is also the story of how I realized the value of this external research which is not meant to find information with some idea from which to later create an artwork; it is rather aimed to help flourish inspiration from within oneself.



Black hole, computer edited

I have always been very curious about the different types of smoke and the nature of the substance from which they were created. This is why I decided to start pondering about the idea of "smoke" and trying to find what it could be a symbol of. Although it was difficult to come up with what it could represent, it reminded me of other abstract elements which, like smoke, had no volume or depth. Consequently, this thought brought to my mind the idea of the universe as it is "everything" and "nothing" at the same time. The solitude and desolation caused by this and attached to the idea of the universe attracted me.

A black hole is a hole made of too much light.

How light and absorption, two contradictory elements could combine was an interesting paradoxical thought which I used as inspiration.

Additionally, I had some side ideas that also influenced the final piece. The human body has always attracted me. The eroticism that emanates from it and the aesthetic pleasure that some bodies give is comparable to art itself. This not only happens when visualizing it as a whole, but also when witnessing a small close up of a certain part. Each part of the body has its own unique nature and magic, although one of the ones I found the most striking is the stomach and the belly button.



*By the Lake, Belly Button
Ruben Sanchez*

Snake → Elements / Abstract → Universe → Desolation

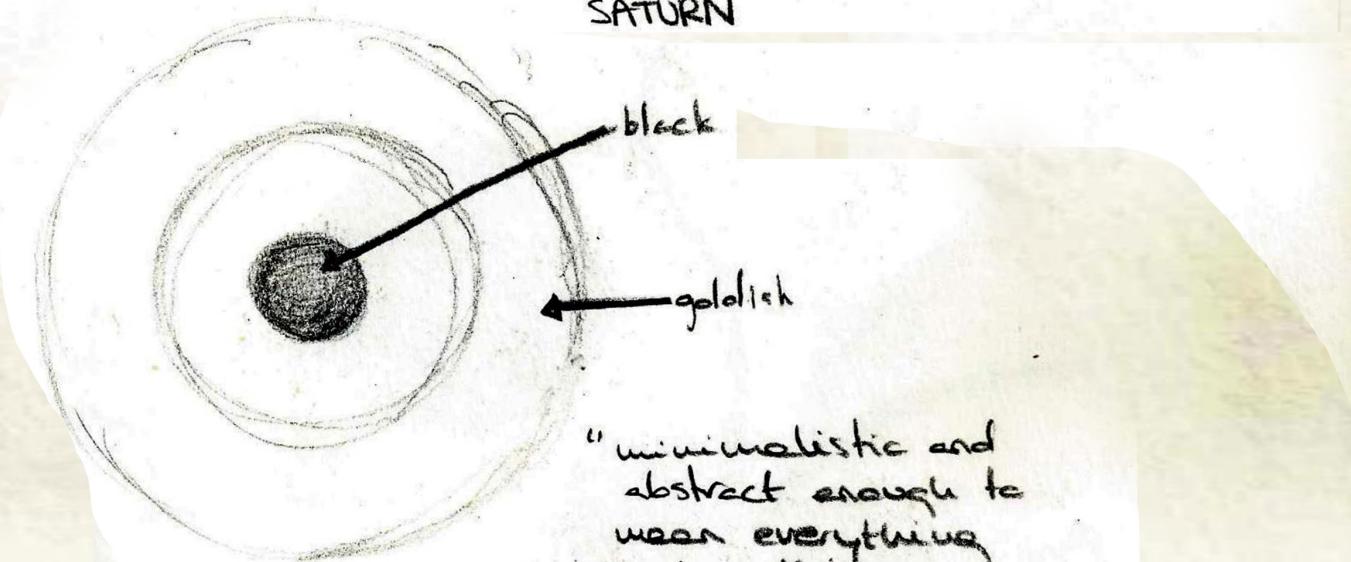
Black holes

- contrast with black = GOLD
- holes + human body = STOMACH → CENTRIC CIRCLES
- holes = CIRCLES = SUN

+

—————
CENTERNESS
—————

SATURN



"minimalistic and abstract enough to wear everything and nothing even if it has no actual meaning."

Color and its

Meaning: two centric circles which contrast greatly in color that can be understood with various points of view. Black express evil/negativeness in all each of us small but deeps inside, gold or "the idealistic us" is on the outside for viewers to watch.

On whole it must be dense and empty be strong enough to catch your eye and light enough not disturb you thinking. It has to be straight forward. It also exemplifies the orbit structure that rules humans life (selfcenterness)

The Thinking Process

I don't really know how I was able to find a connection between these two very despair ideas. However, it all came together when I decided to create a bellybutton as a black hole surrounded by light. The relation I found among these two was directed to the nature of humans in emotional understanding and expression. The circular forms and the universe and the rotation of astros, reminded me of how humans think everything rotates around us. We are all small planets fighting to see who the Sun is.

Chromatically, for my symbol I wanted to create a striking combination of only two colors without relying on the saturation of the hue; I wanted an effective minimalism. Gold and black seemed not only to fit these requirement but they also started to develop a meaning and reason in the artwork. I thought about human values, the ones we show off about and the ones we all have deep inside inherit in our nature. The black circle represented the most shameful vices we all have, the ones that we hide behind our shiny and majestically made curtain of fake values which in my symbol was represented through the gold circumference.

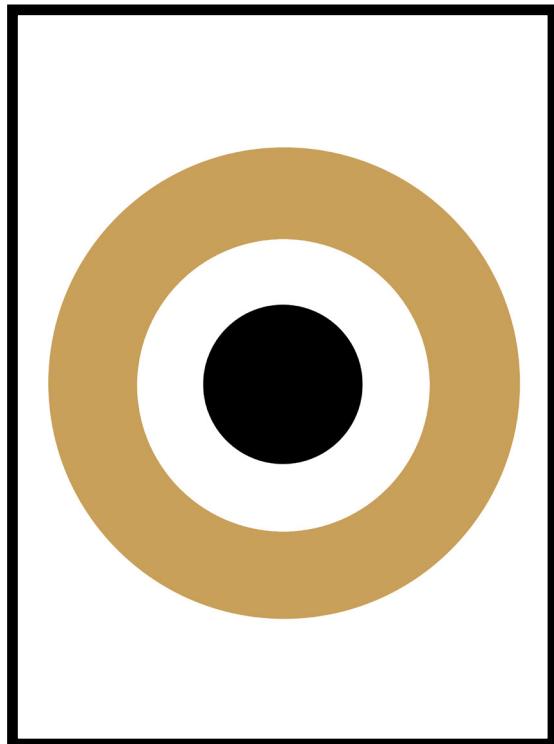
From the beginning, it was clear to me that the form had to be very simple and abstract enough so that not only can the creator find meaning behind it, but also that anyone that saw the symbol could at least have the possibility to find a simple meaning behind it. Through the abstraction of the symbol I wanted it to make the viewer wonder. However, the simplicity aims for one to be able to at least content oneself with a simple answer he related to the logo.

Black holes, belly buttons were both based on one of the most basic geometrical forms, the polygon of infinite sides; furthermore, it was perfectly appropriate for what I wanted to convey. I used a circle within a circumference. The white space in-between could make the golden circumference seem as an orbit, but it also gave a sense of lightness to the figure; it seemed as if that space was "empty". However, I did want to make the symbol itself heavy or in other words, striking to the eye and easy to grasp. This is why I used thick contouring.

Once I finished, I realized that even if it was inspired by the stomach, it was also an ode to the feminine body as a whole. Women are known to be curvier, so when I saw the circles it reminded me of the female breasts, eyes, stomach, and even shoulders.

During this investigation and previous to finishing my symbol, I decided to experiment with the two ideas previously mentioned in order to find a moment of illumination or an accidentally attractive symbol I could use.

This is what drove me to apply women make-up to my own stomach in order to fake a black hole. I used from eyeliner to create the black hole in the middle, to eye shadows for the rest of the stomach. The reason why I considered using make-up instead of paint I don't really know, I guess to some extent I directly thought about makeup since it was skin or also the possibility of creating a more neutral look where the skin could still be seen and distinguished. The final artwork can be seen to the left.



The Final Artwork for my Symbol



Wax Delusion, an experiment in pigmentation

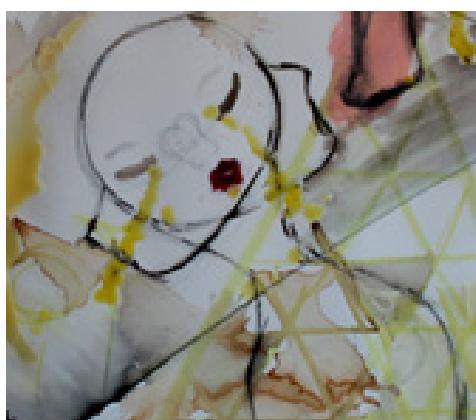


The Final Art Piece: Wax Delusion

This artwork was a complete improvisation I did one very late night, hours before I had suffered a very “emotionally strong” situation and I used art to drain these thoughts and concentrate in something that gave me an instant but long lasting pleasure.

Once finished, as I reflect upon it I have realized that although it was completely random in a way, there are indeed similar traits with my other artworks. In a way, this art piece served me as an experiment for developing my ideas and realizing what truly inspires me unconsciously.

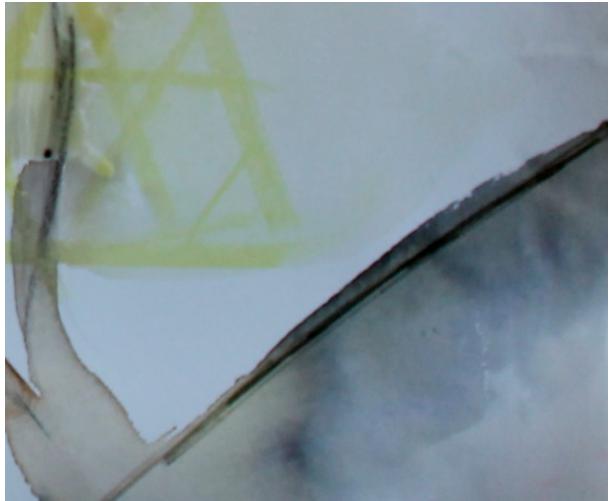
These similarities are present on two levels. First of all there is an overlap in meaning or theme. What has influenced me in other art pieces is present in this one also. There are three references to the human body (a torso in the down corner, a foot in the upper one, and in-between we see a head). I would like to point out some peculiarities of this head since it is the combination of two profile faces but at the same time shows a third mouth as if it was facing the viewer. There is a playful and incoherent element that reminds me of Dali’s “paranoiac-critical method”. Furthermore, my passion for triangles and the connection with mathematics is present. In this case one can see what appears to be simply a good amount of triangles piled up one over the other. However, this form turns to follow a Fibonacci sequence which is one of the most interesting elements in math, since it appears all over nature.



One can see the close up of the head just described above, on the left hand.

Secondly, there is also a great importance given to the materials. I would actually say it is the core of the painting. I started drawing with pencils over BFK paper, but soon I decided to add hard and oil chalks, in order to be able to create a smudged effect in the skin and a more non-careful tracing of the face lines. I wanted it to be messy, as it was how I felt.

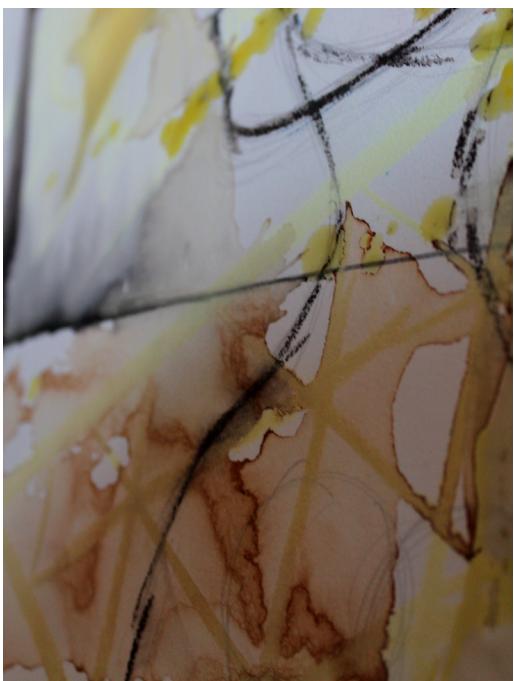
Later on, I also thought of an old chemistry in-class lab where the teacher wanted to show us the different chemical composition of different markers. We were made to paint over a paper and wet it, some of the black markers gave out a reddish ink, others blue and other tones, each different marker had its own different color trace. I spontaneously decided to try this technique with three different markers and see if I could achieve that same blue that I had liked so much the first time. I used a brush to put water over the marked areas, and indeed in the lower right corner I would see small water blue that was not present initially.



As I started to play with the water I realized it wasn't absorbed where I had drawn with chalk, it made me want to paint over it in a similar way to when kids paint a message with wax and then it is revealed when painted over it. As I didn't have paint at that right moment, I decided to use the things around me. The cup of drack Black English tea was tempting enough. I poured the tea without the paint-brush and let it roll over the paper, hardly controlling the direction by inclining the paper one direction or another. I was as if there was another force painting with me.

I was already being extremely experimental and the idea of the wax messages had reminded me I had a candle lit right next to me. I could pour it in a similar way to what I did with the tea and even more, I could pour it over the tea that wasn't completely absorbed and see what would happen. I wanted to see if the wax would completely solidify or mix with it, change color, nature, something.

As seen in the main art piece and in the picture below, it created from dots to masses that cracked up as the paper was not fixed onto any support and curved itself.



Teardrops and Dreams

After deciding the medium I would represent my idea with (which ended up being video) I started to experiment method that would allow me to create the desired effect.

Finally I opted to use ink, as it happened when I was developing the Symbol I wanted to create a very simple combination that would again be sticking. However, this time I couldn't rely on form so I decided to use very saturated values: hot pink and electric blue, which together reminded me of the color magic would have.

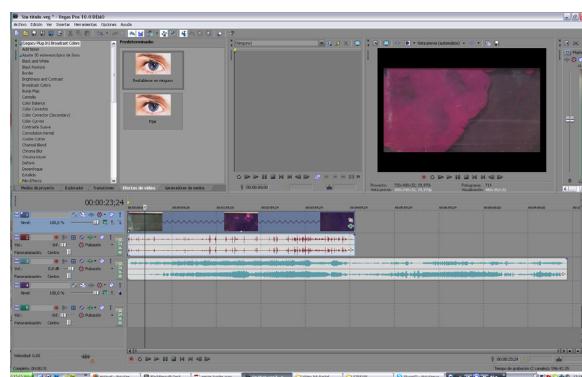
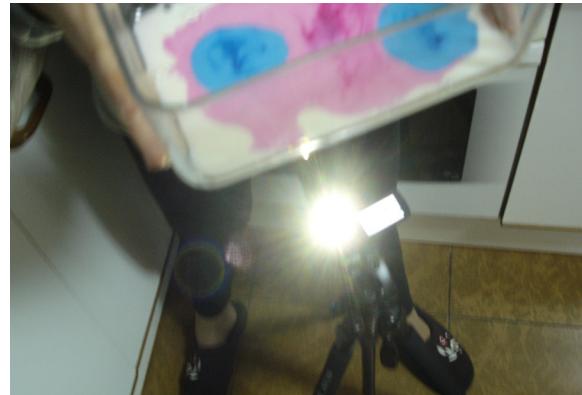
Initially I tried pouring the ink in water and having a black background behind a crystal bowl. But the result was blurry and typical. I wanted it to be more dramatic. This made me wonder what factor I could change in order to achieve it. Finally, I opted by changing the liquid. After using several different random liquids I found that milk allowed a very high definition of the ink drop spreading around once dropped. I didn't like the virginal white of the combination but it was the best I could do by then. This was also the only liquid that allowed me to realize that the blue ink sank to the bottom far quicker than the pink one, probably due to their density, and created very interesting effects.

As I accepted it would have to have a white background, which took away part of the mysterious element, I started to edit my video suing Sony Vegas 10 video editor. I had barely used this program before although I was familiar with the environment thanks to other similar programs. In a few minutes I found the solution: a color editor.

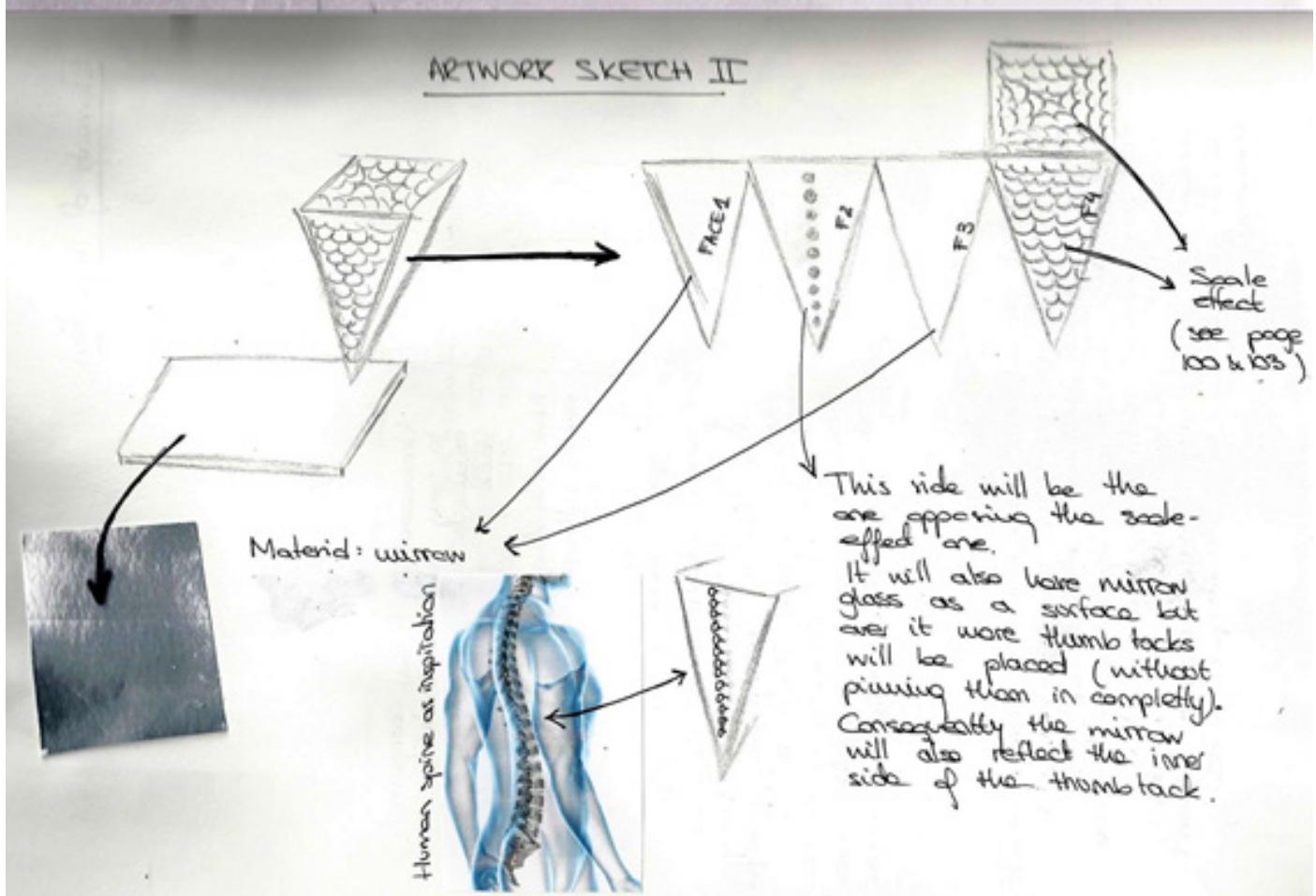
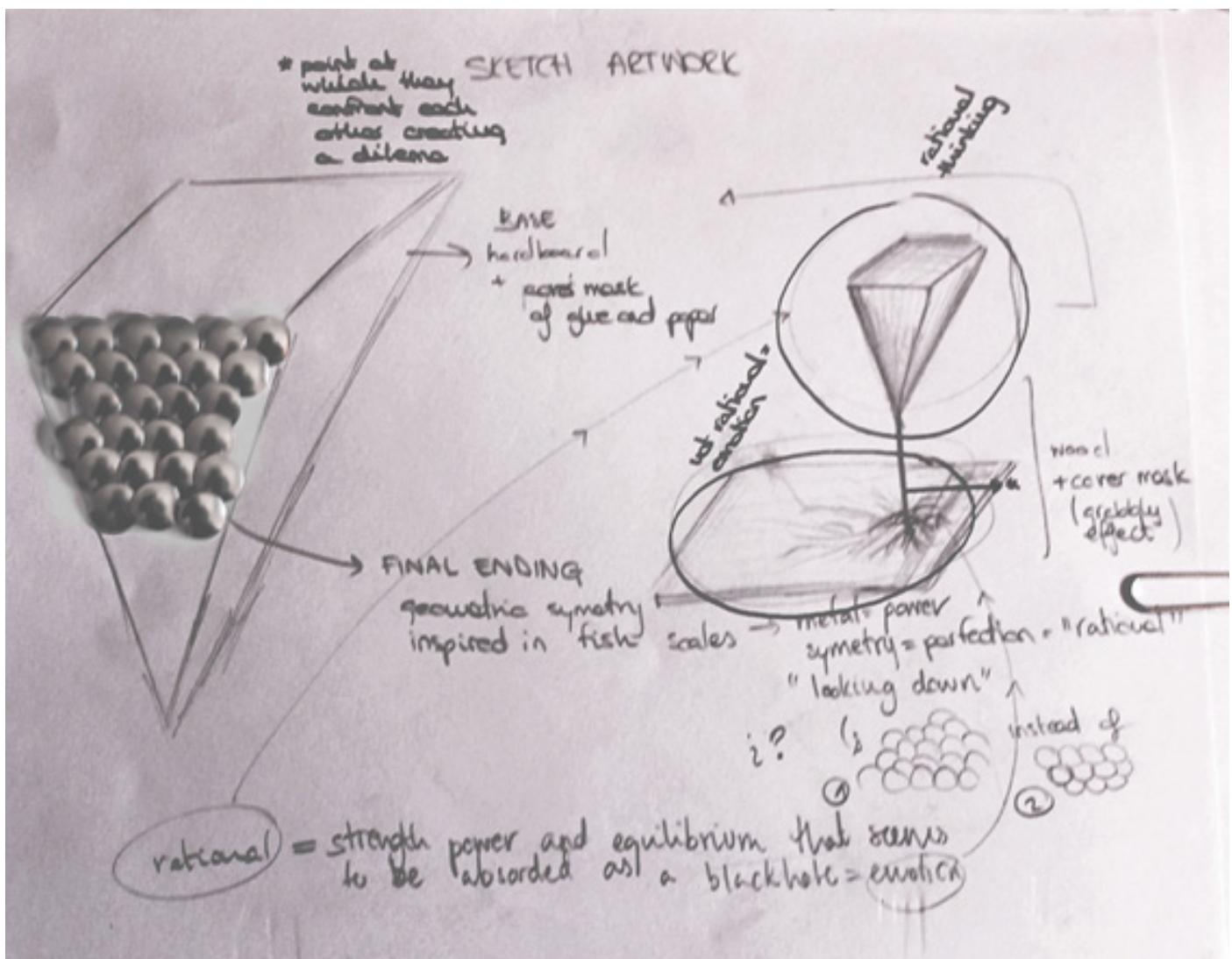
From the other effects possible I used the border cutter that allowed me to hide the borders of the container that were visible at some points of the video and the color editor, as I said before. This one, after changing a few parameter I achieved to change the white of the video to black and also add some saturation.

Apart from that timing and velocity were manipulated and the music synchronization was taken into account.

When it all came together and I saw if for the first time, I knew that in order to get a fully mystical penetration of the art piece's soul into oneself the best way was to involve the viewer. By presenting the video through a projector laid on the floor and the video displayed on the ceiling with a really dark environment I could create a relaxing and dreaming environment ass if one was entering another dimension.



1. The set up, tripod underneath the cristal bol with milk
2. Original Color without edditing
3. Editing color in Sony Vegas 10
4. Adding and synchronizing the music (Simon and Garfunkel, Funkadelic)



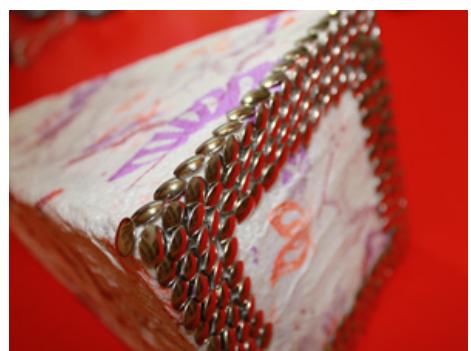
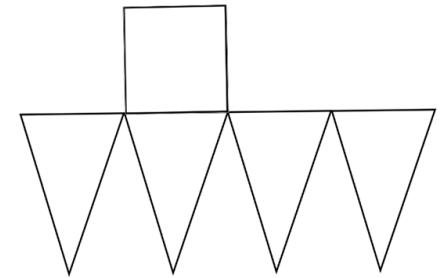
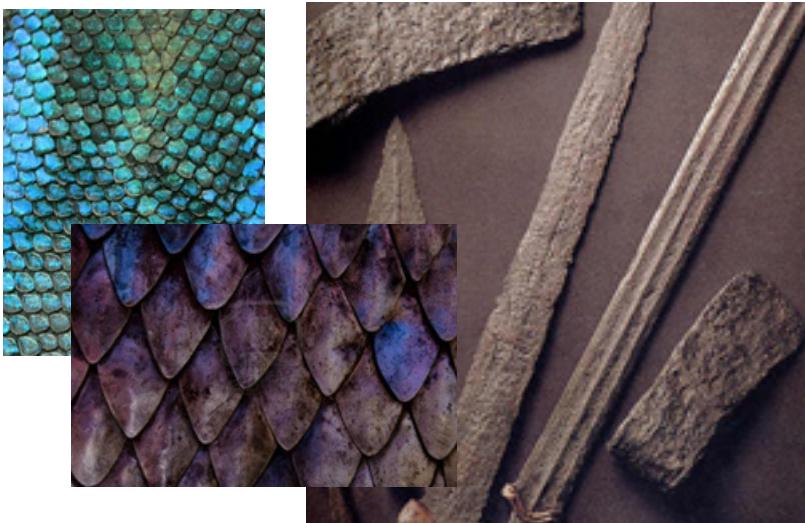
The Process

The basic structure: as it has been commented in the previous pages of the book, I consider that the triangle has certain properties that make it the ideal geometric structure. This is why I used it as the basic form on which I would construct my pyramid.

It was constructed out of cardboard following the diagram above and in order to make it more stable structure-wise, pillars were added inside it.

To get the final uniform surface and also to give the pyramid some consistency a mix of 2/3 glue and 1/3 water was used to cover it with Mache paper.

The final cover: the whole point of this rational part is to imply a message of mathematical perfection, which is usually measured by proportion, balance, symmetry, unity... That is my why thumbtacks were used. The fact that they gave a metallic look to the artwork also helped me portray my idea since metal has always been seen as a material that symbolized strength and power which to me have a true relation with rational thinking. This may be the consequence of the fact that metals have a very high melting temperature which means we usually do not imagine them as liquids, an solids have a more consistent nature: they never change just as math truly never does (not within a mathematical system at least).



Rethinking the Idea

The process of making the artwork was very straight forward and easy until I reached the step in which I had to cover the surface with the thumbtacks and create the effect of fish scales. When I had the idea I didn't consider that the surface where I would be pinning the thumbtacks would be solid and would oppose resistance. Consequently, as I started this phase I realized that not only was it very hard and slow but that I was hurting myself to the extent I didn't even wish to continue and finish my artwork.

However, I didn't want to abandon the idea as I still felt really attached to the message it had to express. I concluded that only a certain part of the pyramid would have the scales effect and started considering other options that would fit into the sculpture's visual appearance and my personal idea and tastes.

Elements of Inspiration

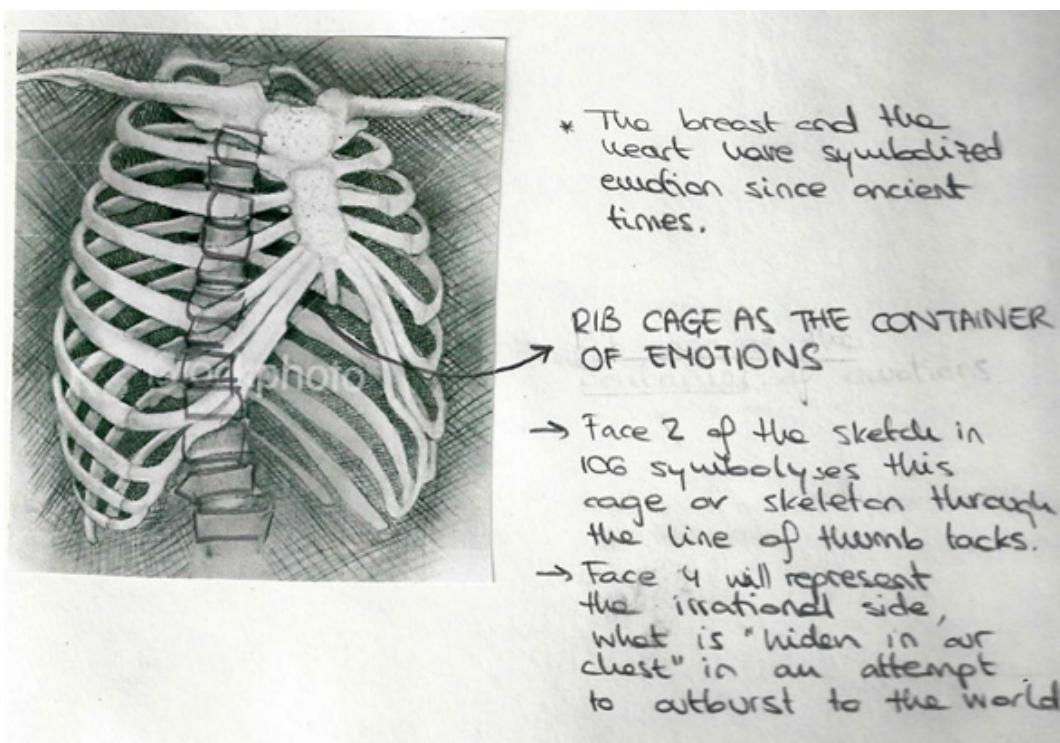


Unconsciously I feel attracted to any element which reminds me to the human back or vertebral spine. Not only does it have an erotic connotation as it can be seen in both images above but the bone's structure itself implies a quite controversial meaning, which interests me. On one hand, it is the element of support of the whole body: it relates to strength, a powerful pillar. However there is a factor of tenderness given the curved disposition of each vertebra and its fragility due to the medulla within it; which all in all creates a paradox, one of the multiple contrasts that interest me.



Due to the long period during which this idea was developed and also because of the visual and material transformation my initial idea of the sculpture the message behind it also suffered alterations. Now, the sculpture had another very important element: the glass mirrors. The fact that this material reflected the "outside world" (meaning everything apart from the artwork) into the sculpture itself, involves the viewer with the piece. It portrayed the viewer in the art and therefore makes it different for each person that observed it

The spine also changed my own view of the sculpture. At first I thought it would be solely for aesthetical values since it challenged the simplicity of the pyramid. But after I visualized its similarity to the vertebral spine a clearer and stronger idea came to me.



The Geometry of Chaos, the geometry of the mind

From a mathematical point of view fractals are mathematical sets that have dimension that fall between the integers. In other words, they do not possess a natural number of dimensions such as 2, 3... but are between them, as it would be the case of 1,55; for this reason the fractals with which math deals are imaginary and cannot be visualized in our 3D-based mind or world.

Consequently we cannot see a true fractal (the ones that can be defined with an equation) in nature, however there are very close approximations, which will be the ones' I will be discussing and can be seen in the diagrams below.

The formal definition of a fractal is, a rough or fragmented irregular shape that splits into parts, each of which is a reduced-sized copy of the whole, as we can see with the example above. We can also define them the other way around, as a geometrical pattern that repeats itself infinitely, on bigger scales in order to produce forms and irregular shapes.

Anyways, what is essential in the argument is the fact that the whole fractal itself falls beyond the domains of classical geometry which means it cannot be associated with any common geometric shape due to its "chaotic" appearance but at the same the pattern reduce to its basic form still is a geometric figure.

This is visually very clear in Figure 1, which is the development pattern of infinite plants as is seen in the example below. In this case the tree branches as a unity do not conform any geometric shape and this may vary from tree to tree, however, when decomposing the figure to its simplest form (breaking down each level of the fractal as done in the sketch) we see its basic shape is a line which is repeated "infinitely" until we get the chaotic shape of the fractal.

This is why it is said they are ruled by the math of science: their outline appears not to follow any 'particular and balanced scheme although on a smaller plane they are composed by simpler shapes.

Another factor to take into account when defining a fractal is that there are two factors which play a major role in it: the form and the rhythm or pattern . In any case they all still have the intrinsic characteristic of splitting into equally proportional forms.

What interested me so much in these figures was the idea beyond their creation. I was amused by the contrasted nature they had, they were the simplest form in the inner nature but appeared to be the greatest chaos possible. I also found through this investigation, a way of expanding my interest in geometry in art into more complicated and unusual ways. It has allowed me to understand the role of lines in the creation of any structure. Furthermore, it has also changed my idea of what minimalism meant and I have found I can create clean pure objects without being constrained to create very simple geometrical figures. An example of what I mean through this, can be seen in the snowflake structure where although there is an apparent roughness (this is the mathematical name for the amount of messiness a shape has) it is also easy to visualize and one is quickly able to decompose it to the simplest form.

Figure 2. A very simple pattern created by the repetition of a straight line that conforms a rough outline

Left. A computer design fractal, which as said before appears to have a chaotic outline conforming a spiral and that can be split into equal smaller spirals. As for the two factors that would create it, the form would be a curved line and the rhythm its repetition to create spirals of five arms.

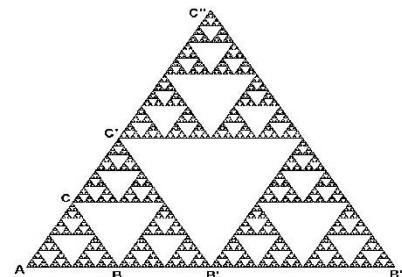


Figure 1

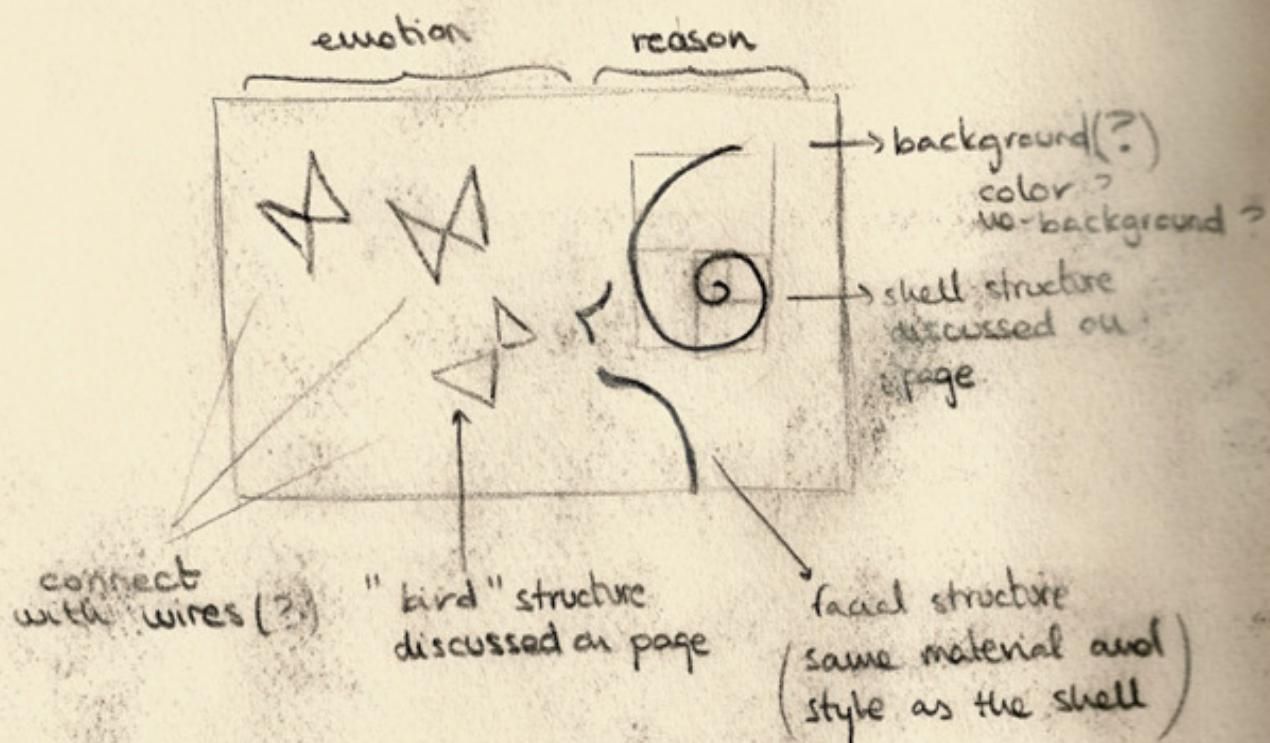


Figure 2



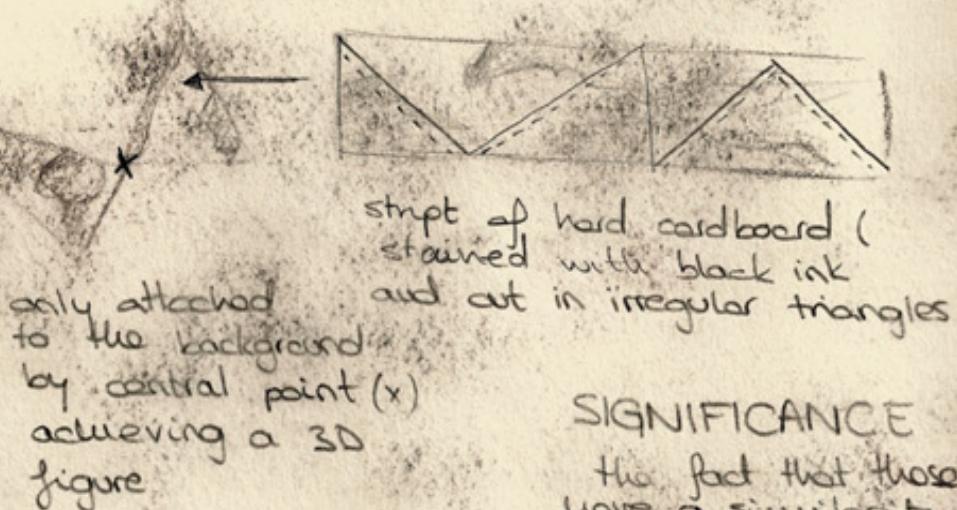
Source: *The Fractal Geometry of Nature*, Benoît B. Mandelbrot

STRUCTURE OF THE SCULPTURE



METAPHOR OF : emotion vs reason

the recurring theme of the contrast between the most reasonable and rational and the internal uncontrollable emotions appears in this sculpture once more.



SIGNIFICANCE

The fact that those figures have a similarity to birds and the open mouth relates to the "outbursting emotions" makes it a perfect metaphor for that contrast I want to show.

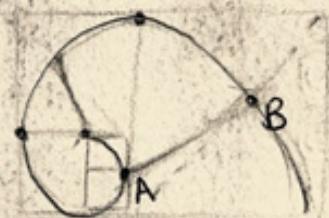
→ real images of shells (sources: google images)



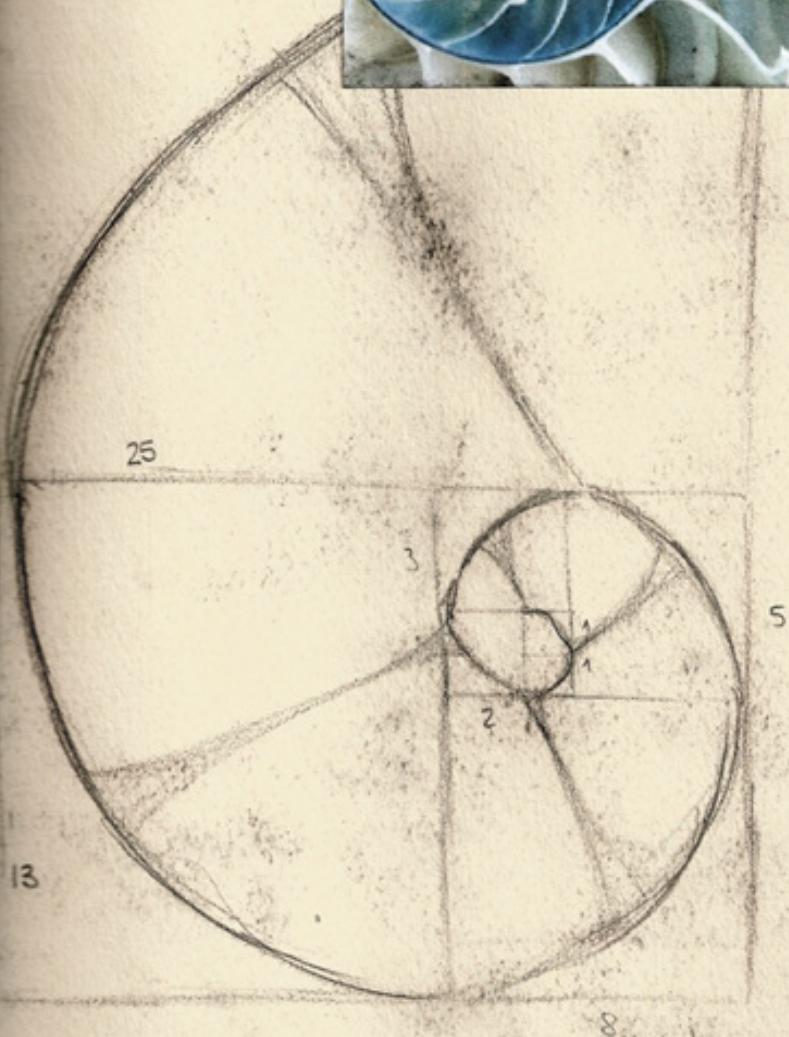
* Fibonacci structure
- followed by nature

$$\{1, 1, 2, 3, 5, 8, 13, 25\}$$

* Where should the perpendicular subdivisions be drawn?



from tangent point (A)
to diagonal interest (B)



{ original sketch with fibonacci structure
overlap with + 3D shell structure done with X material

* X material → purist usage

therefore probably will use
white / gray clay

SIGNIFICANCE

metaphor that will represent the head / cerebellum
of the sculpture

rational structure due to the fibonacci series
will try to represent "reason".

Behind Everything, Emotions

The sketches in the previous pages refer to a sculpture I intent to construct which was inspired by the same theme of my last sculpture: contrast and humans.

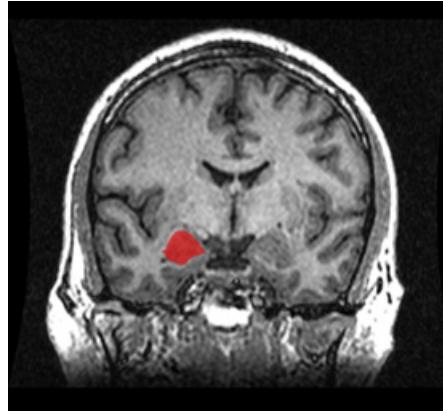
Human beings are rational creatures which is what distinguishes from all other animal in the planet. We have been able to have a consciousness, we are aware of our own thinking. While the certainty of this statement cannot be argued, the extent to which is applicable is of the most uncertain nature. It is true that we are individuals that can rationalize their actions, but is there always a rational answer to our behavior? Human behavior has not developed into a completely rationally-based method which is what we like to think, but has still some purely biological aspects that we usually connotation to the word "primitive". All in all, humans are also emotional creatures and we tend to consider that these two concepts (rational and emotional) can be completely separated and one can function without the other.

Biologically, there parts that are in charge of these two processes are completely separated one from the other (and one can even see how rational thinking proceeded emotions since it is produced in the most recently developed part of the brain that covers all the other internal parts). But conversely, as I learned reading a book called Emotional Intelligence, by David Goleman, these two systems work hand by hand.

Any sensorial experience one has will travel from the sensorial sensors (eyes, ears, taste buds...) towards our brain from which the signal is directed to the amygdale and the neocortex simultaneously. However the amygdale which is the responsible for what we call an emotional reaction can process this information much quicker than the neocortex. This is why, when very dramatic events occur our neurological systems driven quickly by the arising power of the emotion without giving the chance for a conscious thought of the actions occurred.

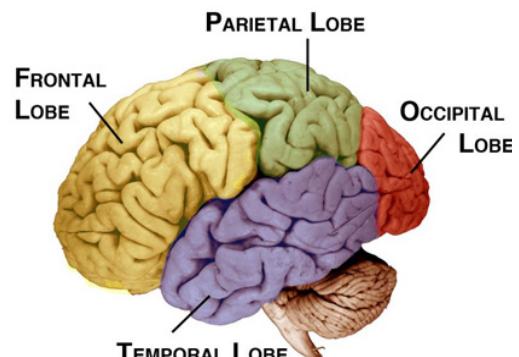
"The amygdalae (Latin, from Greek ἀμυγδαλή, amygdalē, 'almond', 'tonsil',[listed in the Gray's Anatomy textbook as the nucleus amygdalæ) are almond-shaped groups of nuclei located deep within the medial temporal lobes of the brain in complex vertebrates, including humans. Shown in research to perform a primary role in the processing and memory of emotional reactions, the amygdalae are considered part of the limbic system."

Abstract from <http://en.wikipedia.org/wiki/Amygdala>



"The neocortex (Latin for "new bark" or "new rind"), also called the neopallium ("new mantle") and isocortex ("equal rind"), is a part of the brain of mammals. It is the outer layer of the cerebral hemispheres, and made up of six layers, labelled I to VI (with VI being the innermost and I being the outermost). The neocortex is part of the cerebral cortex (along with the archicortex and paleocortex, which are cortical parts of the limbic system). In humans, it is involved in higher functions such as sensory perception, generation of motor commands, spatial reasoning, conscious thought and language."

Abstract from <http://en.wikipedia.org/wiki/Neocortex>



This idea was the one I wanted to contrast through my artwork, however I wished to do it through the contrast of two the elements which should represent the two ways of human behavior.

As it is shown in the sketch I first related birds with the emotional part. This due to mostly one reason: I saw a parallelism between how calm birds could be and how instantaneously they could get scared and fly away.

How the “density” of the birds diminished as they got further away from the danger that had set them to fly away was also very interesting to me. Something similar happens with emotions which right after something has provoked them they seem to burst out uncontrollably, all together, but as time passes and we cool down (and the neocortex has had time to intervene) the emotion decreases until it can be barely seen.

However I didn't want to include an exact representation of birds in my sculpture since I could lead to a miss interpretation of its significance. I preferred a more abstract object which could easily be interpreted as a bird and at the same time more qualities could be attributed to it.

This is why I decided to create birds from a basic structure of two unequal triangles joint by a vertex (as shown at the bottom of the sketch in page 11). As it could be seen in many other entries of the book, I personally feel that triangles have a paradoxical nature which related to the perfectly balanced structure due to its several symmetry axis but that at the same time breaks the staticity of the image.



the initial outburst of emotion has a certain similarity to the sudden flight of birds



The triangles also seem to be a good option since then all the birds I created would have the same exact basic structure (only with different variations in length and angles) which made them seem to be cut out of the same “cookie cutter” which also seems to happen with emotions (even though the reason for anger may vary, there are certain intrinsic characteristics we always repeat). Furthermore, when looking at birds from the distance, only their silhouette can be seen and one can mentally draw a triangular form out of it.

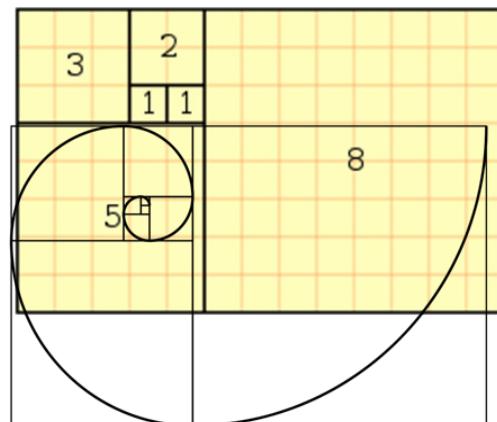
However I have also been suggested to recur to curvier forms since the extremely straight lines of the triangles could also be seen as a rather rational approach. Even though I do agree on this idea, I do not feel comfortable creating these objects with curved lines since I think it would subtract the minimalism intended from them.

Therefore I may consider creating the triangles by ripping the paper (really hard and thick paper, probably BFK paper will be used as it has these properties and is easy to use), since

Behind Everything, Rationale

As for the rational part, I have always had an incredible interest for mathematics since I believe there is also an aesthetic beauty in them. I see this beauty in almost every aspect of them, however in the eyes of the majority of the people this does not occur as intensely, probably because a close attention hasn't been given to find this splendor.

Anyways, there is one element in all the mathematical field, which is not only very well known but it has also gained the respect and admiration of humanity, even those who do not feel comfortable with numbers are able to see why it is so special. I am talking about the Fibonacci series and its consequent spiral.



What at first seems only a game of playing around with numbers acquires a great value once you learn how nature has actually also "played this game".

I even found out a very interesting fact:

"In music, Fibonacci numbers are sometimes used to determine tunings, and, as in visual art, to determine the length or size of content or formal elements. It is commonly thought that the third movement of Béla Bartók's Music for Strings, Percussion, and Celesta was structured using Fibonacci numbers."

While the properties of this series also interested me, I was really willing to see how the perfect arrangement of the Fibonacci spiral could affect my sculpture. This spiral is constructed by creating tiles, which follow the measurements of the Fibonacci series and later joining opposite vertex with a curved line.

What one can see from this structure, is that it is not only a simple line which curves around itself but that follows a very exact system of construction which involves reason.



I also investigated some shells, as they follow similar patterns which also assemble a very perfectionist line.

All these images inspired an enormous feeling of "purity" when I looked at them. This is probably due to the pale colors and the light hue, since white has always been considered as the purest color (purest in a religious and sexual meaning but also visually in the sense of most minimalistic). The image below, was from which I got most inspired since it carried this quality to the extreme.

It somehow blended with the paper in which I had printed it. The shell was almost as the paper. This was the moment where the timing bomb exploded.



Lately, I have been reading the novel Lolita of Vladimir Nabokov which has inspired me greatly.

Therefore I am rethink the idea of the sculpture sketched in pages (---). As I don't have very clear which materials or objects will represent more accurately the metaphor that the sculpture should portray I may produce various smaller pieces based on that idea.

In one of these smaller sculptures I will use parts of passages of Lolita's book instead of the birds explained in page 13.

While I was reading the book, there were certain parts which seemed to show an extremely emotional side. There were moments in which I felt that the author has an uncontrollable urge to tell us how he felt. This uncontrolled contrasted with his passive reactions in the book in which he is able to suppress any emotional action.

I saw the same contrast in any person's nature. Human beings are formed by these two systems mentioned on page __ and they are both connected through the neurological system.

From a biological point of view this connection, its velocity to link ideas or its strength depends solely on each individual. We all have the same functioning structure but it works differently for each one of us.

It is this last statement which I have probably intended to portray. In my artwork I displayed this human nature as if the two elements were completely heterogeneous. I was interested in the contrast between them which in daily life is not seen so clearly as we usually tend to create a balance between them.

However there are moments or even some individuals that are undoubtedly handled by only one of this mechanism. In my sculpture I tried to portray this nature in its most pure state. Vladimir's words do appear to follow this premise as explained before but also the mathematical perfection of the Fibonacci curve was a perfect representation of rational thinking.

Since I had decided to use these quotes which were not my invention but copied from a book (page --) I felt that I would "make them mien" by the style in which I wrote them, they would be personalized. While reading the book I always had imagined the crazy protagonist writing in madly cursive, almost illegible handwriting, using ink and probably leaving a drop or two on the paper. I had an assumption

"Lolita, light of my life, fire of my loins. **My sin, my soul.** Lo-lee-ta: the tip of the tongue taking a trip of three steps down the palate to tap, at three, on the teeth. LO. LEE. TA. She was LO, plain LO, in the morning, standing four feet ten in one sock. She was LOLA in slacks. She was DOLLY at school. She was DOLORES on the dotted line. But **in my arms** she was always LOLITA."

"Oh Lolita, you are my girl, as **Vee was Poe's and Bea Dante's**, and what little girl would not like to whirl in a circular skirt and scanties?"

"Solitude was **corrupting** me."

"All at once we were **madly, clumsily, shamelessly, agonizingly** in love with each other; hopelessly, I should add, because that frenzy of mutual possession might have been assuaged only by our actually imbibing and assimilating every particle of each other's soul and **flesh.**"

"**It was love at first sight, at last sight, at ever and ever sight.**"

An Analysis on Emotions, Handwriting

"Handwriting analysis, or graphology, is the science involved in producing a personality profile of the writer by examining the characteristics, traits and strokes of an individual's handwriting. I know it seems impossible, but a trained graphologist can gather an astonishing amount of information about the writer just from analyzing their handwriting. Besides creating a complete personality profile, many other things are revealed in your handwriting, such as health issues, morality, past experiences, hidden talents, mental problems, to name just a few.

How does it work?

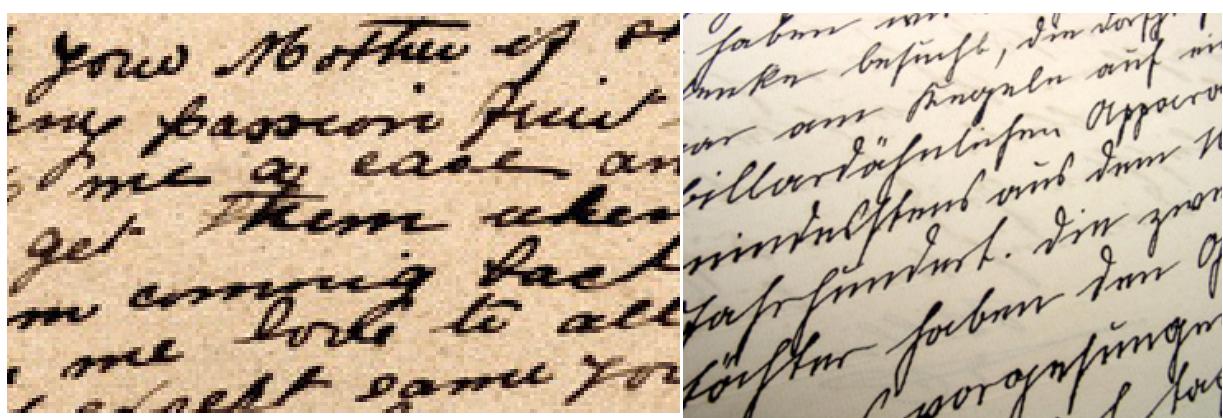
Your brain guides your hand. Everything put on paper is a result of a two-way circuit between your brain and the motor reflex muscles of your hand. Thus, your handwriting becomes a Polygraph or Oscilloscope read-out of your "complete self." To you, it's just handwriting, but to a handwriting analyst, it paints a picture of the person "behind the pen."

What can be analyzed?

When analyzing writing style, first look at the handwriting in general, much like you would a painting. Make mental notes of the most outstanding traits and try to get a general feeling of the writer. Then, determine the emotional energy of the writer. This is the most important factor of the personality of the writer. The emotional energy has a direct impact on every other trait displayed in the handwriting. Emotional energy is determined by how much pressure the writer uses when he writes. If you examine the writing you can determine how much pressure was used by how "dark" the writing is. Also, if you turn the page over and feel the underside you can feel how much pressure was used (especially if the sample was written on a soft surface). Emotional energy is a combination of the physical and mental energy level. Writers with heavy pressure are usually highly successful. They have a lot of vitality and their emotional experiences last for a long time. Writers who write with average pressure are usually moderately successful and usually have enough energy to make it through the day. Those with light pressure try to avoid energy draining situations. The slant is the second indicator to look for. The slant indicates the writers emotional response to external forces. A right slant (////) signals one who responds strongly to emotional situations. They are caring, warm and outgoing-- their heart rules their mind. A vertical slant (|||) writer tries to keep their emotions in check-- mind rules their heart. A left slant writer (\\\) will conceal their emotions and is observed as cold and indifferent."

Abstract from <http://viewzone2.com/handwriting.html>

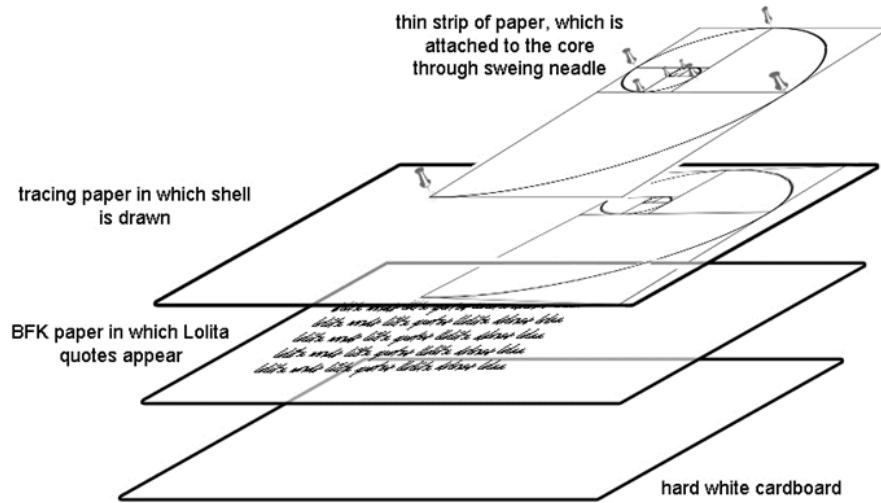
I had already heard about some of these traits and while their validity has been argued several times, I do consider it valid and even applicable to myself. I therefore, thought I could portray the amount of emotion or energy by how I wrote these quotes. I decided that intense color in the writing and an extremely slanted to the right direction would fit perfectly in the context I was working.



The Process of Creation

As I said previously, I decided to consider various combinations of elements by doing smaller artworks which would enable me to visualize the ending result easily and help me decide what would be the best combination previous from embracing myself in a bigger project.

In the first artwork of this series (I intent to do various models in the future) I decided to replace the birds for Lolita quotes due to the reason explained on page (---) to symbolize the emotional part while I used a construction of the Fibonacci spiral from paper.



This diagram represents the dispositions of all the elements of my sculpture (which could also be called relieve since it is only meant to be looked from side).

As it can be seen from the diagram the pieces consisted in the most intense quotes of the book Lolita which I hand wrote with ink. This was a very important part of the artwork, since the style of the writing would determine what emotion could be read from it. As I already mentioned, I tried to lead all possible emotions from myself into the paper. For the materials I decided to stay loyal to what would have probably been used in a daily situation: a madly emotionally possessed man would confess to his diary all his feeling with ink. A class we had previously in the year of Chinese ink writing was very useful in order to copy some techniques however I also wanted to produce a very spontaneous effect so I didn't care if some "errors" came out or I smuggled the paper, or the ink suddenly ended in the middle of a sentence.



As for the rational part of the sculpture, I wanted to show very clearly how there was a mathematical element in this representation. This is why I decided to use the spiral but also the "instructions" for making it. In order words I decided that I would leave and show in my artwork the squares, the measurements and all the lines which were necessary to construct the spiral itself. I used tracing paper for this since in this way it was also clear that it was some type of sketch used (as artist use it as a helping and developing tool many times rather than a material for the final artwork).

An applied study of Salvador Dalí's paranoiac-critical method



The Endless Enigma, Salvador Dali, 1938

I have been hugely impressed by Dali ever since I was a kid. I lived in Barcelona during one year while I was a toddler; however, I am still able to remember the impact that El Museo de Figueras had on me. This interest that I didn't understand completely on what grounds it was built, just made each of his painting extremely curious to me. I saw in them a type of game, a mind puzzle.

Later on, I was able to expand this knowledge by reading extensive analytical articles about him. Some of them considered Dalí a surrealist, a movement which was based on the thought that the reality we perceive through our five senses was incomplete as it had to go through the strainer of rational thinking. It was in the unconscious of our mind in the oneiric world where we could perceive it as a whole, where secret relationships between objects apparently unconnected flourished. The surrealist artist intended to transfer this perception of the world in their canvas and then would leave the viewer to see through free association of his own subconscious a insight of this "complete world" they talked about.

However, while still alive Dalí had never agreed to conform part of this group, he even claimed that "The only difference between the surrealist and me, is that I am not a surrealist". His argument was a very simple one, the surrealist did not have a final intention in mind, they gave the means for each individual to explore its own subconscious, while Dalí's painting were not casual and everything in it was made to serve a purpose, not only to evocate a world superior to reality. His intentions were usually transmitted in the canvas by what he called the paranoiac-critical method, a technique that he developed during the early 1930s.

The paranoiac-critical method was employed in the production of paintings and other artworks, especially those that involved optical illusions and other multiple images. It aimed to access the unconscious for greater artistic creativity. Dali though that the paranoia gave the brain the ability to perceive links between unrelated objects which were expressed in his art through his constant creation of "inexistent objects". In other words, he managed to activate brain processes in the spectator so he would see other images that were actually not drawn on the canvas and as a matter of fact revealed the viewers inside since they worked as a mirror for our own paranoia.

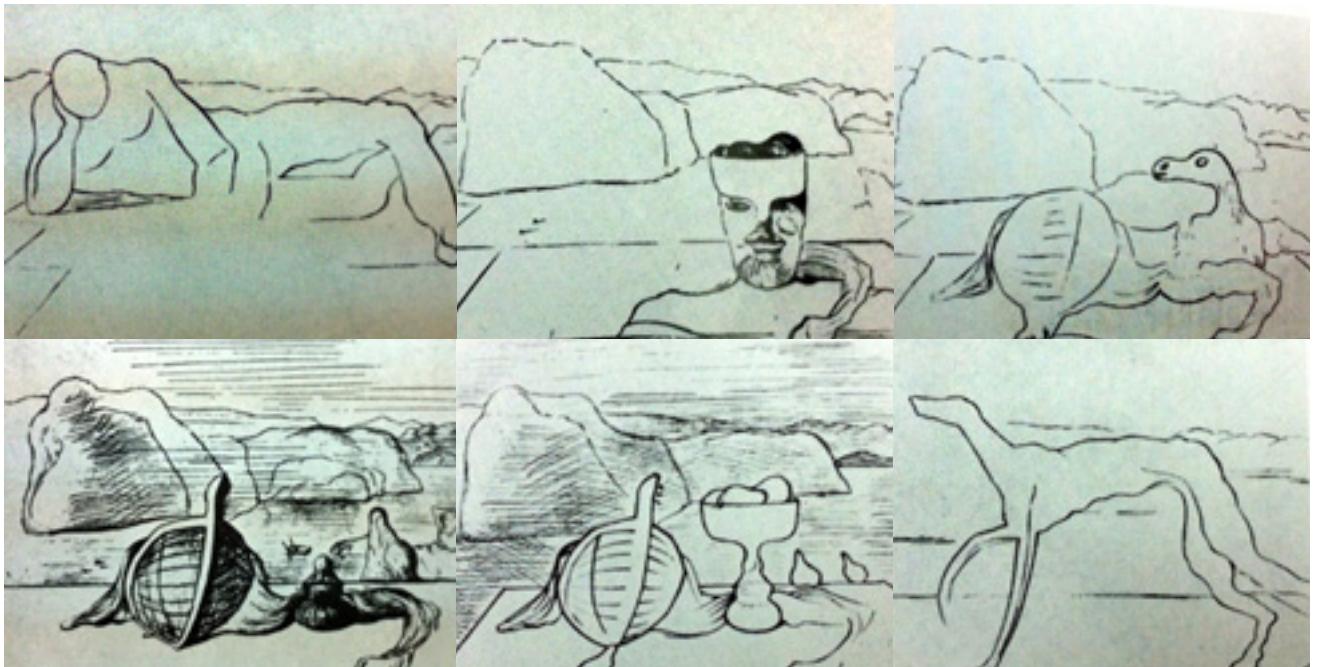
Source: Descharnes Robert, Neret Gilles, *Salvador Dali 1-2*, Taschen 25

I had been aware of this technique and its aims for a long time; however it was after my visit to the Reina Sofia's Museum that it finally reveal to me. I now not only received the information but perceived it. This understanding wouldn't have been possible if I hadn't seen the Endless Enigma, an artwork which Dali painted in 1938.

The importance of experiencing this type of situation, where one is able to create a true bondage with the artwork is what I think creates the difference between a mere understanding of an artist idea and truly and genuinely believing it is true.

My first impressions as I was standing in the room were rather similar to the ones experienced by his other paintings. However, as I gave a step forwards and came closer to the canvas a secondary world seemed to unfold in front of me. It was not only a landscape with a reclined man serving as a mountain. There was also a dog, and some eyes with a bearded nose could be seen. I then remembered my childhood approach towards Dali, and decided to treat him once more as a game, I wondered what else was hidden in that painting, I was playing a hide and seek with the famous Salvador Dali! The observation of the painting created an internal activity in my brain; it was as if it was running around the canvas, getting tired, exploring but it also created a dynamic feeling within the work itself and made my eyes wonder around the painting trying to capture each small detail while at the same time I wondered the "why" of every element I found.

After this initial impression on this unknown painting, I decided to entail a more exhaustive research on it, and actually being able to find what was actually hidden and why. Even though I had managed to discover five of the images, there resulted that there were six hidden shapes which blended all together to form the landscape.



These sketches I found on the thickest two volume book on Dali that was available at my library and have been to me of unimaginable value. I was astonished how that chaotic experience I had lived in the museum was due to these six so simple sketches which did not even overlap more than twice. There wasn't further detail or analysis on the image on any of the sources I had available, however it did manage to find a small reference on how these six images covered the six most important themes in artistic paintings:

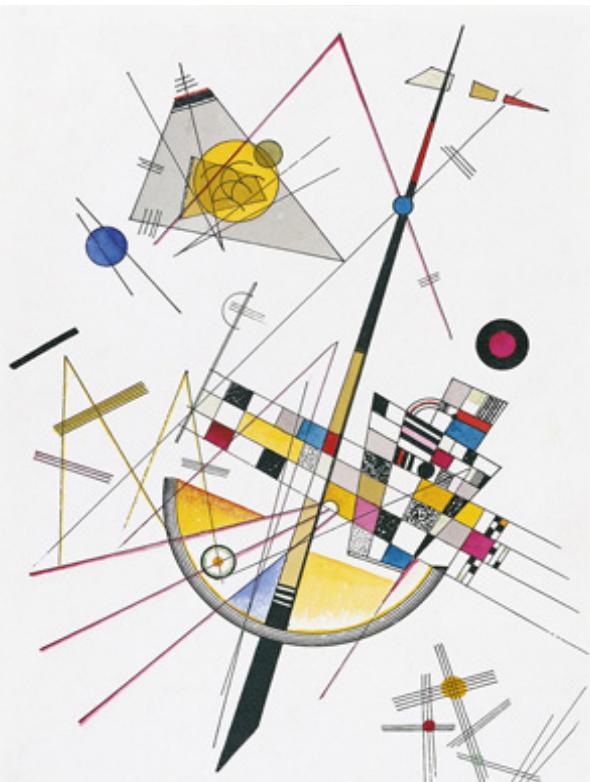
1. The reclining philosopher is a representation of nudity.
2. The face of the great one-eyed Moron being a symbol of portraits.
3. A mythological beast representing myths and creatures.
4. The woman mending a sail boat, seen from the back exemplifies a scene of quotidian labor
5. A mandolin, a fruit dish and figs on a table to show still life.
6. The greyhound in reference to animals.

Role of trust figures in the evaluation of art

As I was finishing my entry on the analysis of Dali's Endless Enigma and was considering the impact this artist has had on my life since a very young age I started to wonder if it really was his abilities as an artist (and a thinker) what made me so passionate about him or if it was just a question of custom and how I had been raised. Or what is the same, for the first time I wanted to question myself if the recognition given to some art pieces or artist is truly deserved of if we are usually lead to believe their mastery because of trust on other who we usually consider have more knowledge (when we are little our parents, then critics and museum professors...).

What was the role of how, when, where, or even who in the perception and evaluation of an art piece?

Mild Tension
Wassily W. Kandinsky
1923



In order to do this I decided to pick another artist that has been equally present in my life for a long time. My mom was fascinated by Kandinsky and I still remember the first time I saw the Mild Tension piece. My ability to even recall the position of the painting in the large room full of other Kandinsky's and modern abstract art pieces definitely gave me evidence of an emotional attachment to the piece in a similar way I felt towards some of Dali's pieces. However, what I was really interested in considering was if this emotional connection was supportive evidence to lead me believe that I did feel an "awe" when I perceived this painting or if I had just accepted it had to be majestically as a preconceived idea. I truly keep feeling a sense of loss when I see a Kandinsky, which I very different to the at least small idea I could figure even without reading about a piece with Dali.

This also led me to reflect on my own artwork and how I wanted others to perceive it. I realized I did not want others to be fully inspired by a piece they were not able to understand. Of course I did believe in the role of mystery or in simply creating curiosity but I believe the strength of my pieces lies in the ideas behind that I do not want to be misinterpreted or forgotten. I realized that when observing an art piece there is not only a reception of the sensorial data given by the physical object but also a figurative meaning as important as this first one, I wanted this second element to be almost as easy to perceive as the physical art piece itself. At this point it is when I realized one of the main differences when comparing the expression technique of these two artists. Although it is true that my in deep study of Dali could be a bias for this conclusion, I think that although the paranoiac-critical method and its intentions in the art piece may not be present, the interaction with the viewer is more direct. However, I do now wish to jump to conclusion on the function and message intended in the abstract use of color and geometry in Kandinsky, as I do believe that the appeal to emotion (as it had happened to me when I was a kid) wasn't unintentional. This is one of the main reasons I decided to investigate what was the value of these two basic elements of art, color and form, meant to him and their function in the artwork.

Color's Psychology in Wassily W. Kandinsky

Wassily Wassilyevich Kandinsky (1866 Moscow, 1944 France) was a Russian painter and art theorist who can consider one of the highest examples of abstract painting. Although he started to pursue his devotion to the arts at the age of 30 through painting studies, this abstract époque developed posterior to the painting of *Der Blaue Reiter* in 1903.

Since his early adolescent he was fascinated with color symbolism and psychology, and when the artist visited an exhibit of Monet's painting this provoked him to be particular taken by the Haystacks impressionistic style which as he said triggered in him a disconcert "That it was a haystack the catalogue informed me.

"I could not recognize it. This non-recognition was painful to me. I considered that the painter had no right to paint indistinctly. I dully felt that the object of the painting was missing. And I noticed with surprise and confusion that the picture not only gripped me, but impressed itself ineradicably on my memory."

It was this revelation moment which probably helped to develop his ideology of art. He considered and called his painting "a devotion to inner beauty, fervor of spirit, and spiritual desire of inner necessity" and this character of his was a central piece of influence over his artworks.

In the treatise "On the Spiritual In Art" which was released at the same time as his painting *Der Blaue Reiter* there can be seen a defense and promotion of abstract art and an affirmation that all forms of art were equally capable of reaching a level of spirituality. He believed that color could be used in a painting as something autonomous, apart from the visual description of an object or other form.

This research was already being very useful, when I thought about Salvador Dali. I could see how the two of them with their apparently different form of expression of ideas could have believed they were doing the right thing. It could be said that Kandinsky was developing his own paranoiac-critique method and trying to touch our unconscious through the everyday quotidian associations we create in our mind between abstract symbols, such as color. To fully understand how his method worked I decided to take a more famous art piece of which I could find more specific information and try to find the connection with the psychological aspect he seems to try to make in the quote above listed.



Haystack, Claude Monet, 1891



Title: Yellow Red Blue

Artist: Wassily Kandinsky

Completion Date: 1925

Place of Creation: Alten / Dessau-alten, Germany

Technique: oil over canvas

Dimensions: 127 x 200 cm

Gallery: Musée National d'Art Moderne, Centre Georges Pompidou, Paris, France

Through his artwork *Yellow-red-blue*, completed in 1925 one can see how geometrical elements took on increasing importance in his teaching as well as in his painting, particularly circle, half-circle, the angle, straight lines and curves, and shows his distance from constructivism and supremacist movements whose influence was increasing at this time.

The large two meter width painting that is *Yellow – red – blue* (1925) consists of a number of main forms: a vertical yellow rectangle, a slightly inclined red cross and a large dark blue circle, while a multitude of straight black or sinuous lines, arcs of circles, monochromatic circles and scattering of colored checkerboards contribute to its delicate complexity. This simple visual identification of forms and of the main colored masses present on the canvas only corresponds to a first approach of the inner reality of the work whose right appreciation necessitates a much deeper observation- not only of forms and colors involved in the painting, but also of their relation, their absolute position and their relative disposition on the canvas, of their whole and reciprocal harmony.

Artistic and spiritual theoretician

“As the *Der Blaue Reiter* Almanac essays and theorizing with composer Arnold Schoenberg indicate, Kandinsky also expressed this communion between artist and viewer as being simultaneously available to the various sense faculties as well as to the intellect (synesthesia). Hearing tones and chords as he painted, Kandinsky theorized that, for example, yellow is the color of middle-C on a piano, a brassy trumpet blast; black is the color of closure and the ends of things; and that combinations and associations of colors produce vibrational frequencies akin to chords played on a piano. Kandinsky also developed an intricate theory of geometric figures and their relationships, claiming, for example, that the circle is the most peaceful shape and represents the human soul. These theories are set forth in *Point and Line to Plane*.”

Abstract from: http://www.museum-online.ru/en/Abstract_art/Wassily_Kandinsky/

Thanks to Monet’s *Haystack*, Kandinsky realized that oppositely to what happened with painting studies, abstract forms in which there was not a direct relation with reality created a stronger cohesion and specially involvement with the viewer. He considered that this painting style created a purely subjective form of experience, in which forms and colors which lack relation to pure exterior world would strike the sensibility of the viewer in the same way emotions did. However, even if there is a rather apparent subjectivity in his painting, the geometrical forms used, color or technique of composition are not purely casual.

Chromatics and Emotion in Yellow-red-blue

From the title it is already obvious the importance of these three colors, which appear isolated and homogenously fuse through the canvas. Slimly to their opposition in the canvas (and consequently even in the title) these two colors also oppose in the temperature scale of color. While yellow provides a warmth sensation and there is a certain coolness attached to the blue, these two colors have more symbolic implications which can appear to be in the boundary of subjectivism.

Based on psychological studies blue is considered to be the color that creates a reflective and intellectual atmosphere; also it is believed to be a color that brings peace and calmness. I would like to point out that this hypothesis may show our unconscious association of these colors to these ideas, ut are not completely random. Blue is the color of the sky, of the sea, two places known to be ideals of peace and silence. I even personally have thought of silence as blue, this may be the reason for it. As for red, the relation is not only clearer but so discussed in the social media one is unable to even question it. Red is the color of extreme power and strength, this may be love and passion, danger or animal strength. It is the color of blood which finds its relation with all the ideas before mentioned. Finally yellow has very controversial arguments to what it may be related to, again showing us the difficulty of being fully objective. Yellow may be seen as an extremely happy color

it stands for good feelings probably due to the atmospherically relation that bright sunny days have with our mood. But as we said, others believe it triggers feelings of anger or depression, also being called the color of jealousy. I personally do not feel these last definitions to apply but it could also be due to the place I have been living. Spain is a very warm and bright country where sun is essential and in which grey day can be extremely depressive as it is not something we are accustomed to.

Source: <http://learner365.hubpages.com/hub/Colors-And-Emotions-Color-Psychology>

Kandinsky was a firm believer of this theory, and considered that emotions could be raised through them. As we see these colors also seem to oppose in their symbolic implications. The contrast between the strength, anger, anxiety that seems to convey the left third of the canvas and the calmness, feminist, relaxing nature of the right thirds blends perfectly with the artwork without creating a sense of "disattachment" thanks to the gradation technique used to fuse colors. This combination of contrast and graduation is all used on the canvas through a rule of thirds as we mentioned before which all together also produces a dynamic effect on the viewer who will not feel an attraction to a fix point. The dynamism can also evoke a similar emotion to the one Kandinsky felt when viewing the Monet painting, the amount of abstract elements (colors, geometrical forms, lines, position on the canvas) which we are used to viewing separately create a sense of confusion and makes one center his attention on his perception and sensation.

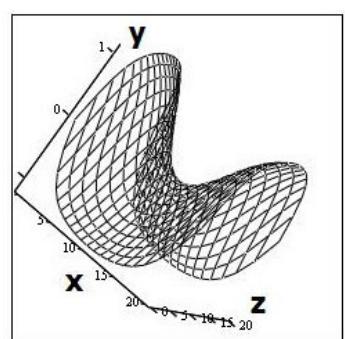
"The line is the product of a force; it is a point on which a living force has been applied in a given direction, the force applied on the pencil or on the paint brush by the hand of the artist. The produced linear forms can be of several types: a straight line which results from a unique force applied in a single direction, an angular line which results from the alternation of two forces with a different direction, or a curved or wave-like line produced by the effect of two forces acting simultaneously. A plane can be obtained by condensation, from a line rotated around one of its ends."

Abstract from: http://en.wikipedia.org/wiki/Wassily_Kandinsky

This fragment above mentioned moved me in a way few assertions have been capable of. It wasn't really a hypothesis that needed to be questioned and proved, it was simply a way of viewing how certain abstract elements were formed and this definitely could impact the overall "meaning" or unconscious message one got from them. It also was very useful given my interest in triangle and circles (the latter was explored and even used as the base for my Black holes project pages 1 through 3). There I showed how women seemed to have a connection to curved lines, which was only related to their physical aspect, which was completely valid. However, this perspective attracts me so much as it gives room for thinking and considering if these forces that are talked about may be something more than just natural random forces that act in the creation.

I also found a relation with my mathematical attraction and how math is present in nature. The fact that I can only prove the existence of a mathematical pattern and that it is coincidentally convenient to use these mathematical formulas or equation we are supposed to have invented makes me question if we have developed a mathematical system based on the reality around us, in a similar way Kandinsky's abstract work is not fully invented in his head but has influences of his environment.

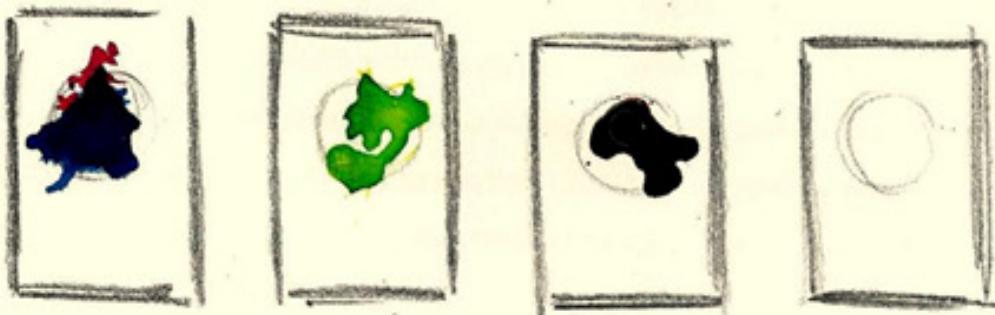
This is another different mathematical system in which there is a hyperbolic geometrical plane. The concept of straight lines made me think about the importance of the plane in which one was when considering how a certain line (segment that joins to points) behaves. It is interesting how a straight line wouldn't look straight in this geometry; however this is only two if we are "outside" the geometrical plane. I want to explore how geometry would appear in a different reality. If we were inside a different plane.



Lobachevsky Negative Curvature geometry

IDEA

→ set of a number of photographs



This summer while I was in the kitchen I had an artistic 'illumination'. We had had beetroot salad with meat and mustard sauce, my menu for that day is important since it was what became art to my eyes. While I was cleaning the dishes I realised the beauty and expressivity of the sauce trace left in one of the plates, however I didn't have my camera with me and as I put the dish under water I realized how even eating had an instantaneous artistic beauty.

That moment is still in my head and has impacted me incredibly. As I have been thinking about it and developed a desire to recreate that same style of artwork.

Therefore, I will be doing a series of artworks based on this technique.

I will use food to leave a color trail and photograph various combinations.

1. PHOTOGRAPH

consist in a completely white background with a white plate

the light must be intense but allowing shadows from some angle



2. PLATE AND CHROMATICS

the plate will serve as a canvas and food sauces (not actual food) as the color palette.

These color spots will symbolize the same effect as when someone eats their meal

Each plate will consist in a different meal

however it is more than that

I also identify it with Kandinsky's abstract works and his art theories



4. PRESENTATION

since this will be a series of artworks it is important the display of the whole group to denote unity

as attention will be centered on the color, the photograph will be in minimalist frames (black and thin) and they must be ordered in a line at eye height

3. NAME TAG

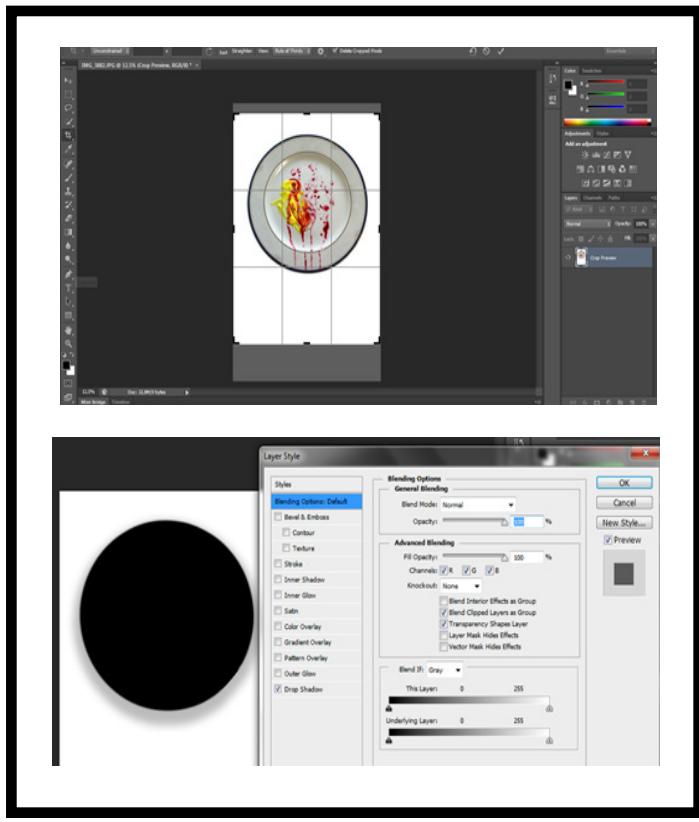
this will imitate the name tag of any artwork but in it there will be written at least two things (which will actually end up being the title of the artwork)

1. Name of the meal
2. title/job position

Development of the artwork series: n.1 of the series

For this trial (as it is a series I will get to experiment with more food and techniques) I recreated my initial scenario from which I got my idea and used beetroot sauce and mayonnaise with yellow ink in order to recreate the mustard from that day and achieve a more intense yellow. I also vertically flipped the plate since this achieved a dynamic experience in the picture due to the gravity pull on the materials. Also, the black stroke only serves as a representation of the final result when framed up, since that is also a very essential element of the artwork.

Furthermore the picture was edited on Photoshop (more information will be added as the series is completed).



Final artwork nº1

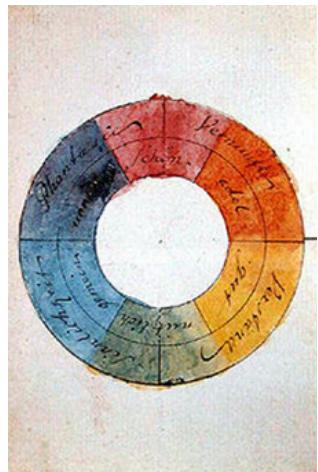
Development of the artwork series: investigation on color

As I mentioned before, the idea for the initial piece was fairly accidental, I just took advantage of the situation. However, I wish to continue “playing” with food and wishing it as a material in combination with the chromatic scale and combinations possible.

When I view my finalized piece I became aware of one of the elements that created such an impact on me the first time. In the color wheel the hues of yellow and the magenta used are opposite to each other, or what is the same they are complimentary. Another factor that helped achieve this effect was the value of the colors used: there was a high saturation in both of them while they contrasted with the clean white background.



Previously I had made an initial research or psychological observations of color (color and its effect on humans) based on Kandinsky's use of color in his artworks. Later I read certain fragments of Goethe's Theory of Color, whose perception of color seemed very inspiring.



*Goethe's Color Wheel
Below, abstracts from
his mentioned book*

One of his main points in the construction of his view of color was the refutation of Newton's scientific color spectrum theory. He believed that darkness wasn't an absence of light. This observation is very similar to the artistic approach to color since usually an artist uses dark as a hue itself, something that has to be added to the canvas if he wishes to achieve shadows or darker colors. He also developed a color wheel (from which the one above develops) in which colors we arrange to a natural order; the colors diametrically opposed to each other in this diagram are those which reciprocally evoke each other in the eye.

There were some parts of this book that impacted me a lot, not because they reveal a new perspective to me but because they were able to verbalize sensations and emotions that I had already related to this colors unconsciously. I think that this book will be very useful for the development of my investigation book and shows that it is possible for objects to evoke emotions and those emotions can be put into words.

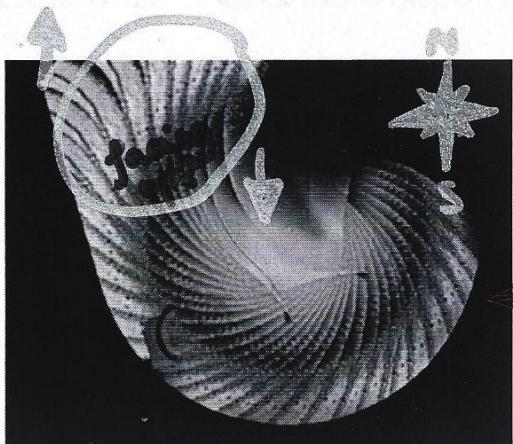
Talking about blue: “As the upper sky and distant mountains appear blue, so a blue surface seems to retire from us. But as we readily follow an agreeable object that flies from us, so we love to contemplate blue — not because it advances to us, but because it draws us after it. Blue gives us an impression of cold, and thus, again, reminds us of shade. We have before spoken of its affinity with black. Rooms which are hung with pure blue, appear in some degree larger, but at the same time empty and cold. The appearance of objects seen through a blue glass is gloomy and melancholy. When blue partakes in some degree of the plus side, the effect is not disagreeable. Sea-green is rather a pleasing color.”

“The colors on the minus side are blue, red-blue, and blue-red. They produce a restless, susceptible, anxious impression.”

“In looking steadfastly at a perfectly yellow-red surface, the color seems actually to penetrate the organ. It produces an extreme excitement, and still acts thus when somewhat darkened. A yellow-red cloth disturbs and enrages animals. I have known men of education to whom its effect was intolerable if they chanced to see a person dressed in a scarlet cloak on a cloudy day.”

CONSTRUCTION ANALYSIS

in thumbnail n.1 I wanted to show the main element of this composition and its application of the final piece.
It is picture n.1 where background has been deleted.

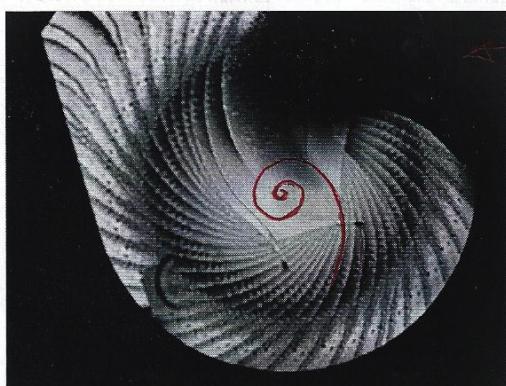
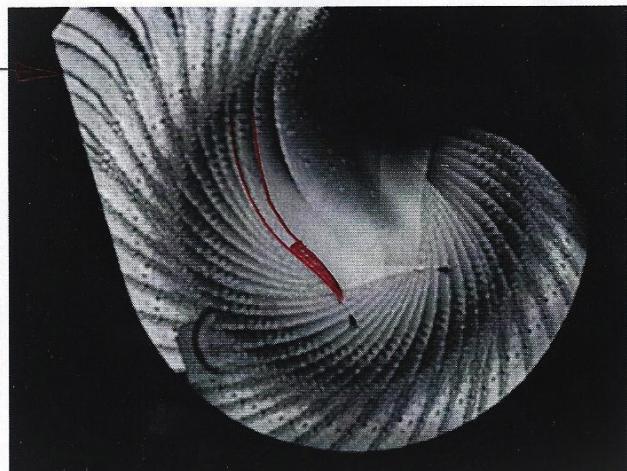


→ in thumbnail n.2 I was considering the POSITION of the shell within the frame.
if it wasn't completely symmetrical should it open towards, upwards east, west?

in thumbnail n.3
I showed the angle of rotation between each instance of picture n.1

* I was wondering if some special angle as the golden ratio & would has any special effects?

↳ RESEARCH

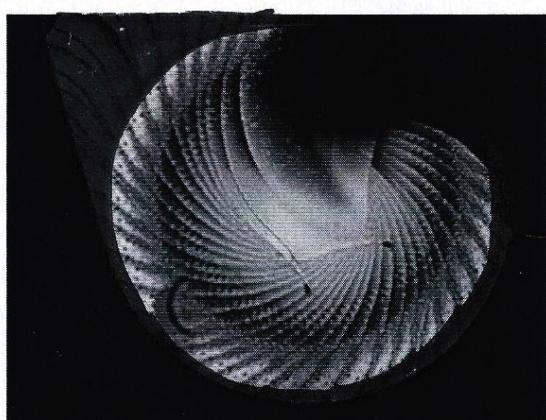
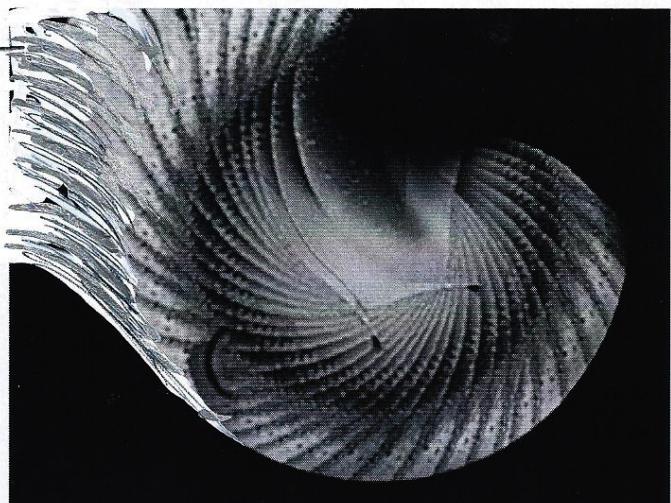


→ in thumbnail n.4 I wanted to show how if the curve that is produced by the females back & behind is extended it produces some type of spiral.
* Is it any type of spiral?
* Does this spiral change depending of the angle?
* Fibonacci's spiral?

↳ SPIRALS

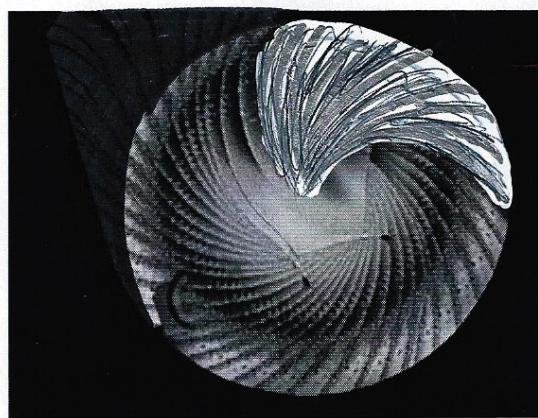
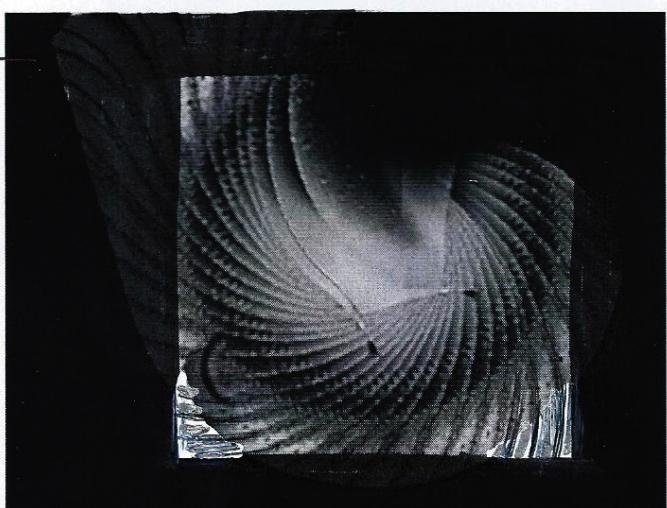
PRESENTATION
ANALYSIS

EXTENDING SPIRAL ←



→ VANISHING CIRCLE

PERFECT SQUARE ←



→ PERFECT CIRCLE

Influence

My attraction to the human body as an art piece itself has been present even in my earliest pages of my IWB. I have considered it as master piece of a paradoxical combination of eroticism and delicacy. As I mentioned in pages 1 and 2, the natural curves formed by the body didn't seem random, they were made to create balance and perfection. As these curves were especially present in the female anatomy, I was mostly captivated by small close-ups of women body parts, either naked or allowing a good definition of the body.

The fact that these types of photography can be regarded as "porn" or lacking of real value and being cheap artwork if not contemplated with the appropriate eyes was an issue that had always bothered me. I wanted to be able to use them as an inspiration for my art, without the direct possibility of degrading its value. This is what led me to try to use naked feminine photography in almost a "subliminal" way.

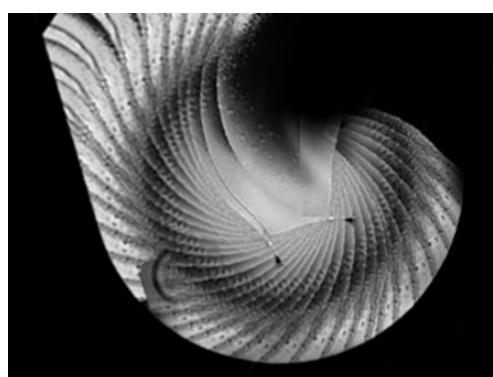


My interest in the feminine back, that had already emerged in my project Black-hole page 1, hadn't faded. The curve formed between the lower back and the thighs is so similar to a mathematical sinusoidal curve that there is a point of rotation where the vertebrae form a perfect circle. spiral lines would appear within the circle formed.



Experimenting Process

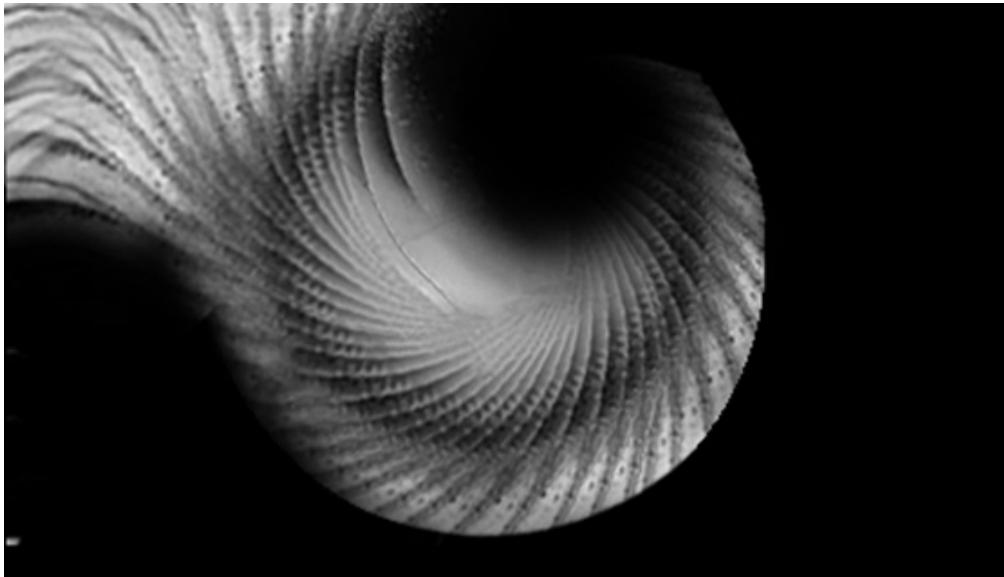
This idea that had been floating in my mind for so long is what I finally decided to try out. As I already had a mental sketch of how everything should look, I had to search for a feminine image that showed this curve in the exact same way I imagined it. This search proved incredibly harder than expected and I only found one image that came close to what I expected, and it was from a paid image bank. At this point I realized I would probably have to take the photograph myself, which wasn't a drawback itself but it was indeed a tough situation for which to find a model. I decided that this would add a huge importance to the subliminal effect, since now it would be an exposing picture of someone known in my environment hidden behind some mathematical operations. It also provided me with the complete freedom to create to the perfection the idea I had in my head, I could choose the model, the pose, the area photographed, the light... However, due to the difficulty and amount of work that this would take I decided to first do a trial with the image found of the internet. I considered that as it was going to be rotated almost infinitely, the watermark would hopefully end up disappearing enough to not be an inconvenient for the greater picture.



As it was a trial / sketch of what it could end up looking, I wasn't very careful and there were lots of small details that could have been fixed if I had done a better work in cleaning up the initial image.

One can see at some point part of the camera of the watermark, or two black points formed towards the middle of the image, or a rather imperfect superposition of the last image layer added. These are part of the things I will have to take into account when creating the final piece.

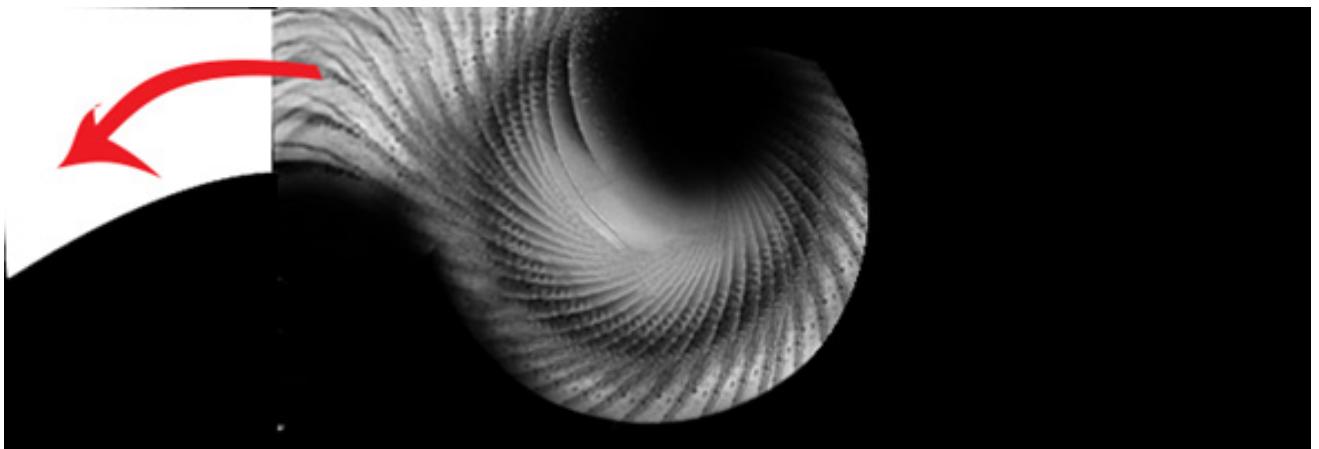
Before embracing the final piece, which will use another photograph, I decided to still work with this image and manipulate the presentation ideas given on page (---). From them I considered that the expanding spiral was the most appealing to the eye as it was formed by a perfect circle in the middle of the canvas but the static effect was avoided thanks to the first third of the canvas where the lines spread out from the middle of the piece reaching the borders.



Final Artwork: The Trial

After having perfected the spiral itself (the defects that it had from being a bad image and the quick and not careful work, given it was an initial sketch where I wasn't so sure where I was going yet) I considered the position of the spiral with respect to the canvas itself. I had already considered the idea of placing the center of the circle in the center of the canvas and having the left covered partially by the spiral, while the right remained clean. The proportion that made it most attractive and "balanced" was when the portion occupied by the leak was as wide as the diameter of the circle itself, and symmetrically on the other side.

However, I will have to start all over again to achieve this effect as the length of the spiral was limited.



Possible Sketch 1

Spirals and the Golden Ratio

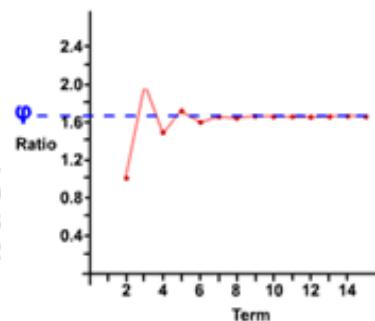
I have been thinking a lot of the Fibonacci spiral and how I could maybe relate the artwork I had in mind with it. As I had already investigated in pages 15 there was a certain characteristic of all the elements that followed this mathematical principle that made them really attractive to the eye. After these initial trials, of just a continuous rotation of the body figure by small angles of 2° , I remembered that there was another mathematical property related to the Fibonacci sequence and that had to do with the angles in circular movement.

"In geometry, the golden angle is the smaller of the two angles created by sectioning the circumference of a circle according to the golden section; that is, into two arcs such that the ratio of the length of the larger arc to the length of the smaller arc is the same as the ratio of the full circumference to the length of the larger arc."

The Golden Ratio ϕ can be approximated by a process of successively dividing each term in the Fibonacci Sequence by the previous term.

With each successive division, the ration comes closer and closer to a value of 1.618033987...

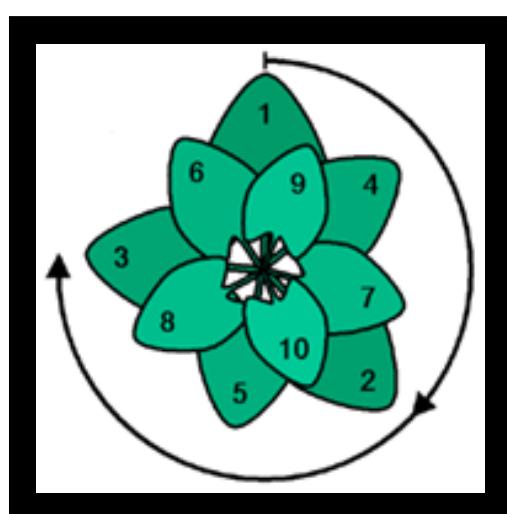
$$\begin{aligned}2 + 1 &= 2.0000 \\3 + 2 &= 1.5000 \\5 + 3 &= 1.6666 \\8 + 5 &= 1.6000 \\13 + 8 &= 1.6250 \\21 + 13 &= 1.6154 \\34 + 21 &= 1.6190 \\55 + 34 &= 1.6176 \\89 + 55 &= 1.6182 \\\text{etc...}\end{aligned}$$



More than its mathematical explanation what drove my interest towards this angle was a video uploaded to Youtube by a famous vlogger of fun math videos which I have been following for a year now. These videos called "Spirals, Fibonacci and Being a Plant" were one of my main influences towards this topic. Through one of them I first learned of the angle disposition of leaves and petals in flowers, known as Phyllotaxis, which of course prove to be a completely mathematically based strategy.



Videos source:
<http://www.youtube.com/watch?v=ahXIMUKsXX0>



If the angle in which these leaves rotate around the stem is 180° after a complete rotation they will overlap and the top layers will be blocking the light for the ones underneath. In fact this would occur with any rational fraction at some point of this rotation cycle, these angles will always end up with blank spaces between, while the leaves continue covering each other.

This is what makes the golden angle so majestically. By situating continues objects at ϕ or approximately at 137.5° , the "blank spots" will be constantly filled with new leaves but never completely, just enough to leave space for new ones to keep growing in between.

Composition n.1

The final art piece was produced following this plant growth strategy, in a belief that not only would it allow for the infinite growth of my spiral but also that it would produce a special attraction to the eye in a similar way the golden ratio proportion works in rectangles or other figures. (Study attached shows that when people are given free choice between different proportion boxes the ones that follow this proportion i.e. 5:8 are more widely chosen.)

Over a basic black color background, the first layer was added. By continuously applying a free transform action to each layer and rotating it at a ϕ angle or approximately at 137.5° and maintaining the same spot of rotation (marked by a red dot in figure n.1), the “blank spots” would be constantly filled as this step was repeated.

Figure 1 includes the first three steps of the process once rendered the image that will be used as pattern (included background cleaning and transparency settings).

From it one can see how there is a ϕ angle difference between layer 1 and layer 2 (angle AB), and also between layer 2 and layer 3 (angle BC); however this angle difference is not maintained between layer 3 and layer 1 (angle CA) nor any other new layers with the ones previously added, which is what makes this spiral so especial. No layers will ever fully overlap; therefore infinite layers can be added.

Figure 2 provides a close up to the point of rotation of each figure.

Figure 3 shows a middle step of the project as more layers are added where one can see how the spiral starts to take shape.

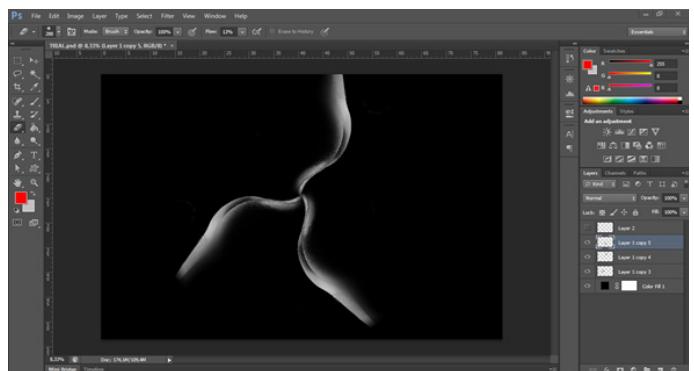


Figure 1

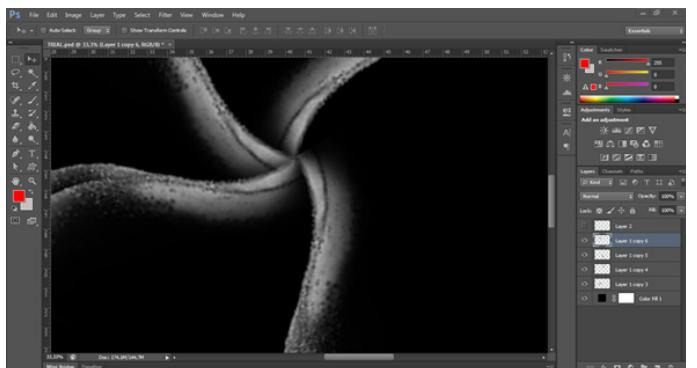


Figure 2

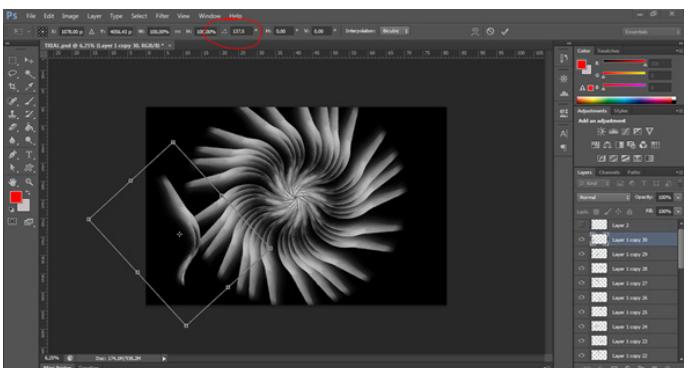


Figure 3

The Series, Photographs

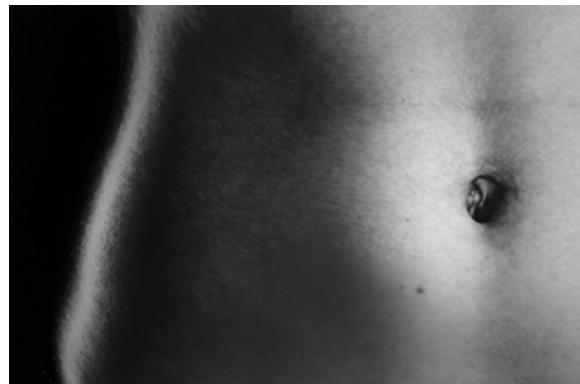
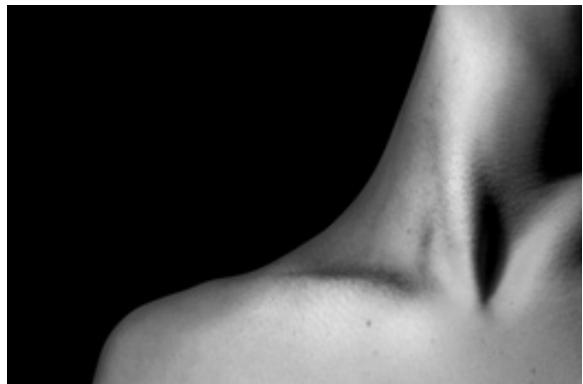
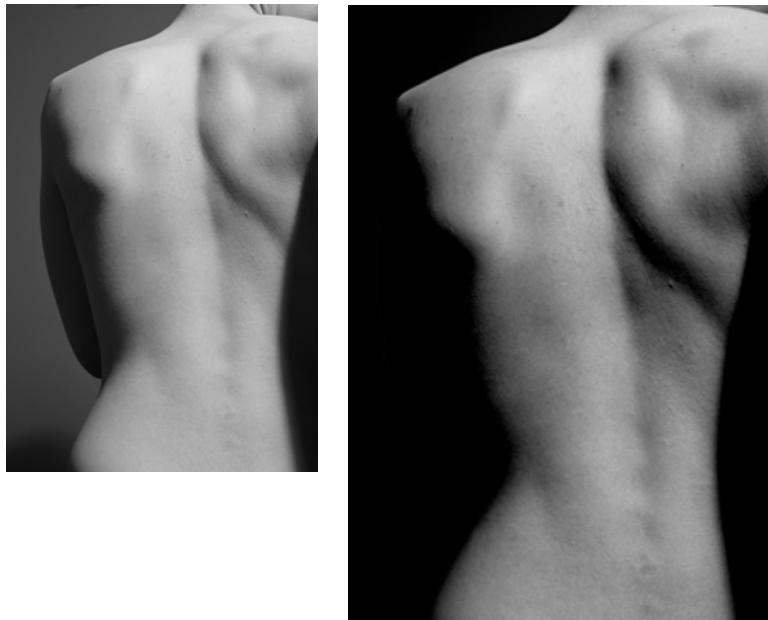
As I finished my first art piece of the Golden Spiral style I decided it was time to finally invest time and shoot some photographs myself that I could later use as a basic form in the same way the lower back was used in my first one.

The idea was the same, find a curved line (real or formed by the shadows) in the body of a woman and photograph it under a very strong light creating at the same time shadows. The three images below we taken in a green room where there was only one light source strong and focused at a specific angle to reinforce the curved line I was interested in. The images were later edited using Photoshop, were the Curves adjustment and the Burn and Dodge tools were especially useful. In me occasions even the Feather tool was used to completely remove the background and create a smooth curve; which is exactly what I was interested in.

To the left the initial black and white image without editing is displayed. Next to it the final artwork is shown. The interesting curve in this case is not a real one, but one formed by the muscles, the position and the strong contrast of the value.

The bottom left image is a neck where there is a very marked curve with the background, but also some very interesting shadows are formed because of the bones.

The last one has another real curve although in this case it is very light.

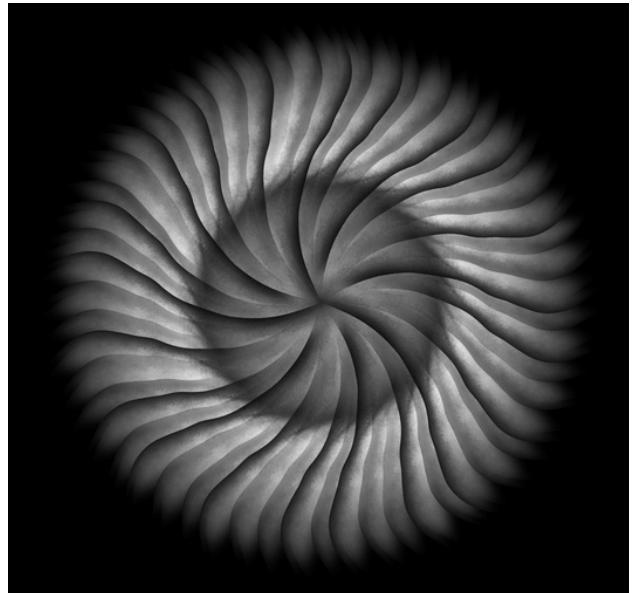
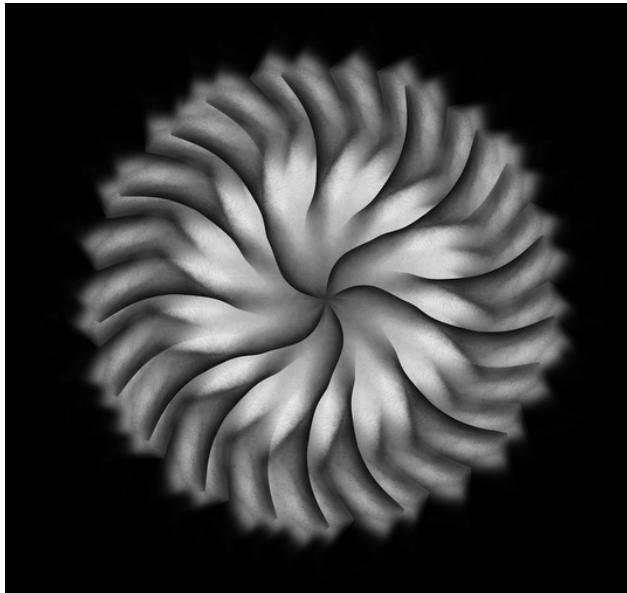
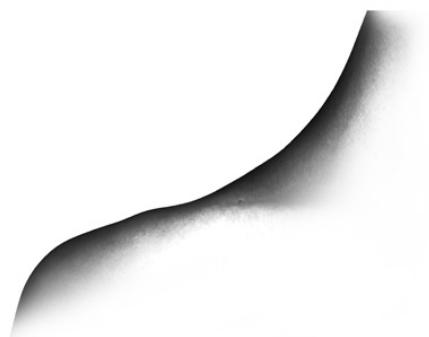


After seeing the final result of some of these pieces, I think that although they are still intermediate steps towards my final artwork, I will use them in my final art exhibition this year. As I showed my final spiral to some friends they were incredibly amused when I told them what the real image was, it was shocking. They did not see it coming. I think if I was to display each spiral with the initial photograph from which it was created a different perspective could be added to my art. It not only gives the viewer information and makes him capable of understanding the work (even if it reduces the mystery of knowing what the initial image was) I consider it allows them to wonder even more how it was done. It may also help me show them how these nude photographs can develop into so mysterious objects, and at the same time will create a different atmosphere for their display that will feel less provocative or sexual.

The Series, Spirals

These photographs however, needed some extra rendering in order to be able to be used as “form” for my spirals. Their background had to be transparent so each curve would hide the ones closely underneath; also one must note that background not only meant the part of the photograph that wasn’t skin but any part of it that wasn’t the curve itself.

One example of how this looked like can be seen in the image to the right, which initially was a shoulder.

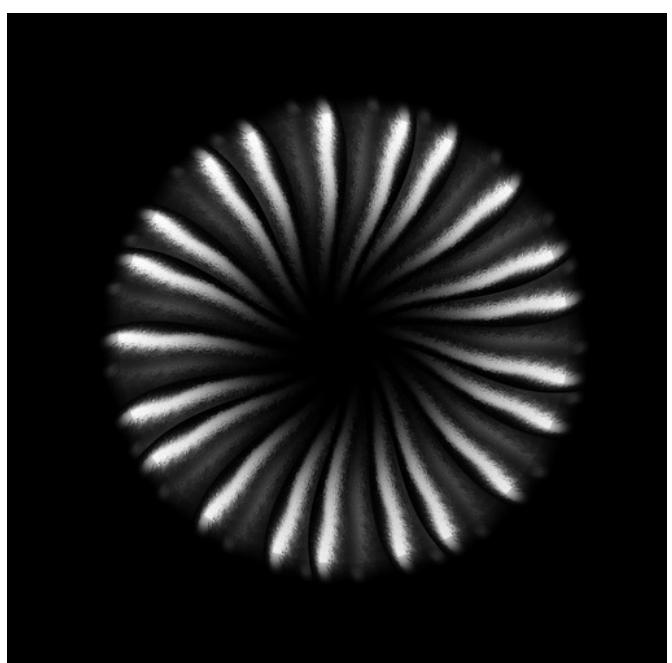


The Final Art Pieces:

Above left, made by rotating the shoulder piece by the bottom corner of the shoulder

Above right, made by rotating the shoulder piece by the top corner of the shoulder

Right, made by the rotation of the waist-hip curve of the stomach photograph



Listen Music with your Eyes

I have always felt a especial connection to the piano, although my incapability to perceive rhythm has prevented me from learning to play it. Anyhow, six years ago I became extremely passionate when a very close friend started to constantly play Chopin pieces. This has made me appreciate even more any opportunity I have had to listen to the piano live, and even more I love sitting next to the person playing it. Until now I thought this wasn't really something to feel proud of, since a song is supposed to be perceived through the ear and valued by its musicality.

However, a month ago as I was sitting in that same chair listening and watching another friend play the Solfegietto, J. S. Bach. I wasn't merely distracting myself when I saw him play, I realized that it was as magical as the musical notes that came out at the same time. The complexity, the velocity, the movement, how one hand sometimes crossed over the other or how one finger would reach out to a further key... All those small details were not recorded in any music CD, in any YouTube video, not even in a live concert; it was a privilege for which one had to be at the right moment, at the right place. I realized how difficult is to show to the world this beauty if it is so hard to visualize, you can't truly reunite thousands of people around one piano, and even if you could record the hand movement in a videotape I wanted to explore this idea more deeply.

I was considering ways to record this movement and to create the same awe that the piece itself had when you listened to it. Then I remembered how motion (displacement versus time) is recorded on paper in Physics. I thought I could use a similar graph in this case.



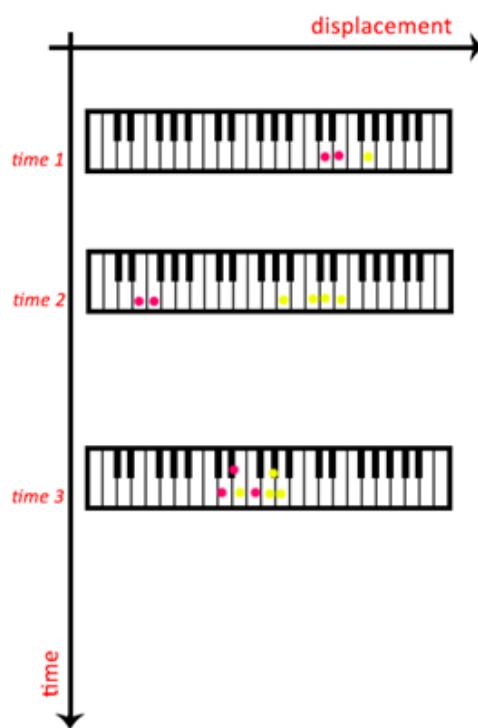
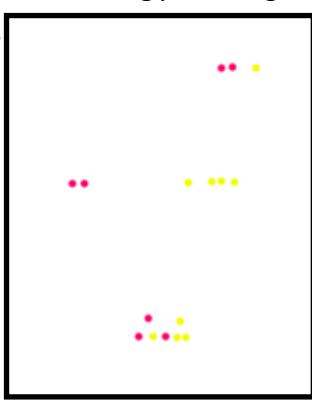
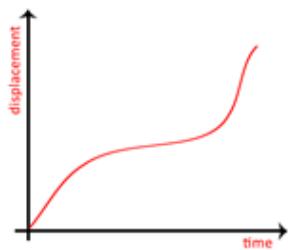
The Process

I therefore decided to create my own graph, having displacement in the horizontal axis and time on the vertical one, also time would move downwards; everything made to fit easily with how pianos work rather than with the real concept of a graph.

In order to be able to track this movement I needed to have my friend play the piece over a material that would save all the positions of his fingers, also he or the material would have to move with time, in order not to overlap the positions.

After several trials using paper over a piano, this method was declared unsatisfactory as my friend wasn't able to find the keys. Then I realized a transparent material would avoid this problem, furthermore if it was hard there wouldn't be any problems when he pressed over it and wrinkled the paper. Finally I realized we could do the whole piece on a long piece of glass.

How the song played on the right graph would look like.



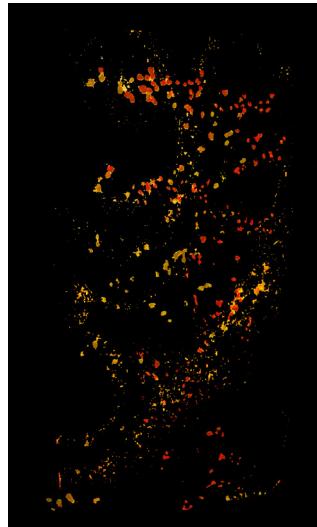
I created a long paper piano of real dimensions that would be placed on one side of the glass, while my friend with one hand dipped in yellow acrylic paint and the other one in pink, would be on the other side of the glass. He would start playing the song while I moved the piano downwards, forcing him to also move his fingers down. Finally, once the whole song was performed we covered one side of the glass with paper to make an opaque surface that could be photographed and avoid seeing the other objects of the background.

This image was later rendered in Photoshop in order to achieve a more contrasted and impacting piece. The white background was substituted by a solid black color, the saturation levels were changed and several hue values were tried.

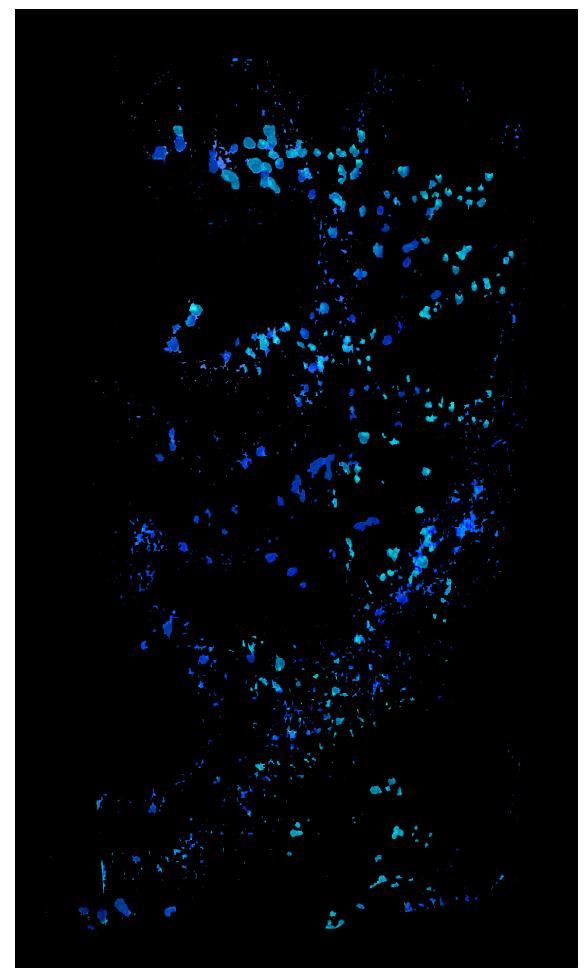


Above the final painted piece. This was the image edited later in PSD.

Below, my friend placing the fingers to show that it matched the original song.



Left, final edited file with its original hue.



Below, file with a blue more cold hue. Finally I used this chromatic scale because when I randomly asked people what color they related to music a good amount answered blue.

What defines something as art?

One week ago the popular art exhibition ARCO 2013 was held in Madrid, as it has been happening every year. However, this time there was a small surprising awaiting all of the visitors...

Two days after the exhibition was over I heard a very curious and interesting story. A group of news reporters that worked for a Spanish TV show called El Buscador had put secretly one of their own artworks in the exhibition. And what it was mean by “their own”, they had simply made 2 year olds paint over a white canvas with paint. What was truly very interesting were the moment when after hanging the painting they started interviewing the visitors that came to see it. The opinions were varied but there was a complete agreement on the high value of the artist, the strength of the message that he was communicating (whatever it was since they really couldn't come to an agreement) or even the completely reasonable price of 15.000 euros for the piece. Knowing what the painting really was one could feel how ridiculous these people looked like and one was tempted to call all of them snobs.



Screenshots of the artwork when it was shown on the emission on television where one could see the kids doing the artwork themselves, the final piece introduced and the comments of several visitors.

Video can be watched in Spanish at: <http://www.youtube.com/watch?v=Pj4MVtoNWZc>

Some of the comments about the painting deal with the anxiety and sadness of the painter, flowers and landscapes and nature, desperation to find a path of life, sexual oppression, the painter was described as an old man of probably 50 years and also a great thinker with lots of experience...

All in all, it reminded me of the idea I explored a while ago (page 20) where I wanted to find out where the emotional attachment to a certain art piece comes from. I showed me the importance we give to trust figures when evaluating art, in this case being all the critiques that are behind the organization of ARCO. Even more, it made me think of what truly made several lines randomly cut, a bunch of different color paints, a solid green square within a red one or other not-technically praised pieces, art. What would this painting need to have to be art? Or is it art already? Could the same physical appearance be worth 15.000 euros if it was from a well-known painter? What differentiates de small kid from the old painter if the final result is the same?