



HÖGSKOLAN FÖR SCEN OCH MUSIK

MUSIC TRANSLATION OF IMAGE DATA ANALYSIS

**RESEARCH OF AN ALTERNATIVE METHOD FOR MUSIC COMPOSITION
FOR MOVIES, BASED ON IMAGE DATA ANALYSIS.**

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ABSTRACT

With this bachelor thesis project I am exploring ways in trying to determine a gap between image interpretation and its music translation¹ and experiment on creating a new form of graphic, or group of signs, that would stimulate alternatively the movie music composer. Try to perceive a sense similarly through the other, as if it would be a continuous flow of art and not the reproduction of everyone's else common related emotion, to a movie scene, in this case.

¹ with music translation I mean the process from interpretation of image to its final music result.

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1. INTRODUCTION.

I have grown up with the dream, as every other “artist” in this world, to have a beautiful video as a background of my own music. And at some point it has happened.

I have also worked with making video for someone else’s music, and the process of getting an idea for a video was generally quite simple in both cases; I closed my eyes, listened to the music and let the imagination happen.

When we close our eyes and listen deeply to music, we do it so that we can completely immerse ourselves into the sound, free from distraction, and eventually imagine a place, a happening, a landscape, a dream.

But what happens then when we want to create music and use our “music imagination” when looking at an image or a video?

When I had to start writing music for an image or a video, I had found myself looking at it repeatedly, and I was either improvising, or I would try to transform my perception of the image into some kind of logical translation to music.

The music, for the creators of the image/video, was in some cases not emotionally proper compared to how they had imagined it. I had looked at the video, interpreted it my own way and wrote music to it. It took then more time and several e-mails to be able to shape the music to the directors taste.

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When a movie director² shares his scene to the music composer, the image³ becomes directly subjected to the composer’s own emotions.

The director has an idea in his mind, he sees a scene, a movie, and he explains what music he feels would suit the video. And it’s not always so simple.

An example that I can mention, which gave me the input for this essay, was when I had received a short scene from a movie director I was writing music for.

² The Movie Director will be mentioned repeatedly throughout the text and for this research will be mentioned as if it would be of male gender.

³ The word Image will be referring to Movie/Video throughout the whole text.

The scene shown a couple having an argue in their own apartment.

I looked at the scene repeatedly and every each time I thought that the scene was perfect just as it was. For me the scene was so emotionally strong already, that I personally thought it really did not need music!

I did then compose the music on request based on what the director asked me, but I couldn't stop thinking that maybe the scene was no longer giving the same feeling when music was added?

I had noticed how the image was so strong in my own interpretation that would eventually affect my music composition, but in the end I had to follow the director's guidelines.

So then I thought, I should find a way for me to be able to write music for video without looking at the video itself.

I wondered, would it actually work in the same way, or possibly even better? And what are the aspects that stimulate my inspiration when looking at an image? And more importantly what are the aspects that blocks my inspiration throughout the whole process⁴?

If I had a guideline, a text, a signal that would tell me what to do without being influenced by the emotions I receive from the scene, then maybe I could more easily concentrate my composition on what exactly the director is asking? but how?

It would be amazing if the director could share his exact emotions for a scene, as if they would be scored on a pentagram⁵, on a graphic. Maybe only then we could become the exact musical extension of what a director is feeling for a scene.

Even when I was able to get references and ideas for music, I have directly noticed how hard it is for a Movie Director, (I have not worked yet with a big budget movie, probably things would be quite different) , to express and communicate his "musical emotions"⁶ regarding a scene.

⁴ The word "process" will refer to the process and all of the aspects of sharing of an artistic idea between the creator of image and the creator of music.

⁵ Pentagram, or musical notation, is used throughout the whole text as an example of music translated into signs.

⁶ Musical emotions stand for what feeling given by the music, the movie director is imagining for a scene

I have had several meetings with a director for example and composed several drafts and spent many hours of work before achieving a final result. And that is of course part of the process.

But, that made me notice that yes, I still need my years of experiences in the field to be able to quickly interpret a director's idea for a scene, but also that what can happen is that there is sometimes a gap in communication and sharing of ideas if you don't directly "artistically click" with the person who is looking for music, for example.

If I would be an orchestral director I would be able to give note sheets to each of my musician, if I would be an industrial designer I would be able to share my design project, If I would be a football coach, tactical instructions on a board. And so on.

If I (director) would be looking for music created by a specific artist, then I would simply ask the artist to write music at his choice, but the truth is that if I have an exact and detailed idea for a scene, I won't be able to give the musician the extension on my idea⁷, in no other ways than with words.

Until now I have probably used the word Movie Director more than music, but I have understood that to be able to extend this research, I will have to walk backwards in the process of creativity and business relation.

Because if we start from knowing that not always a Movie Director is capable of exactly express with the details what feeling he would like to give with the music, then we have to create a blank paper and the right pen to write on it.

I want to be alternatively and more genuinely inspired or influenced from someone else emotion, in this case through images. I don't want to write music on a movie as if I would dress the emotion with the right cloth, but become the extension of it, find a way to walk backwards into the movie director's mind and playing notes as if he would be doing that, at the very beginning of his idea.

Even more because nowadays, in the society we live, if the Movie Director would tell me that he needs sad music on a music scene, then we can all refer to what sad music is. When in reality if we wouldn't continuously connect emotions to ideas and concepts, then we would be able to play a G major and feel sad.

I would like to skip the process of theoretical interpretation of the sharing of an art idea, and research on finding alternative tools of communication between 2 artists, encouraging the use of pure imagination and subconscious approach to the art.

⁷ With extension of idea, I mean the most possible pure continuation of an idea of art.

My idea is to try to determine a gap between image interpretation and its music translation⁸ and experiment on creating a new form of graphic, or group of signs, that would stimulate alternatively the movie music composer. Try to perceive a sense similarly through the other, as if it would be a continuous flow of art and not the reproduction of everyone's else common related emotion, to a movie scene, in this case.

I have started wondering about what aspects could subconsciously influence/inspire us when writing music to image. About when our deepest artistic momentum sparkles into creation or when it strongly gets influenced.

When writing music for movie, a music composer commonly focuses on:

- Creating a more convincing atmosphere of time and place.
- Underlining psychological refinements.
- Serving as a kind of neutral background filler.
- Building a sense of continuity.
- Create a theatrical build-up of a scene, and rounding it off with a sense of finality.

All of these aspects are subsequent to us interpreting the image.

And to be able to skip my interpretation of the image, I will have to do exactly the opposite.

With further studies on this subject I would try to completely omit the "looking at the image" and test it on a bigger number of music composers, but since this is the beginning of a wider experiment, I am going to try to extrapolate aspects of an image/video that could help me alternatively compose music, inspire me, guide me, or simply give me hints about what the director's first idea was.

I have started my research by simply starting to write down on paper because I have understood it would help me draft possible graphics and signs.

For this essay I wanted to go deeper into something more abstract, and as I will later on describe, the psychological aspect about the perception of image and music, it's something that had always strongly fascinated me.

From this I hope I will be able to understand more about my own relation to the psychological side of, for example, the simple relation between 2 artists, the perception of image and music interpretation, the stimulation of the artistic momentum.

I have no fear in reaching no conclusion because it will require travelling within myself on aspects of art, and particularly the relation between image and music, which I am not sure I completely understand.

⁸ with music translation I mean the process from interpretation of image to final music result.

2. THE APPROACH.

- We could describe the process of writing music for a Movie, through these steps:

1. Movie Director Scene >
 2. Explanation of the idea and music references >
 3. Interpretation of the idea by the composer >
 4. Composition of the music by the composer >
 5. Listening of the music composition by the Movie Director >
 - 2.1 Request for a change in the music. >
 - 3.1 Interpretation of the request >
 - 4.1 Composition based on request >
 - 5.1 Listening of the new music composition, by the Director. >
 - 6.1 The Director is satisfied with the music. Done.

- Let's example now the process of setting up lights for a movie scene.

1. Movie Director Scene >
 2. Lights Setup Sheet. >
 3. Done.

So now, let's imagine if it would exist a notational system that would translate the movie director's musical intentions for the scene into a single page.

1. Movie Director Scene.
 2. Virtual "Pentagram" I am trying to create.
 3. Done.

I am at the beginning of the process and many questions come up.

First of all, why would I need a pentagram for an Idea, if they idea could be easily explained by words?

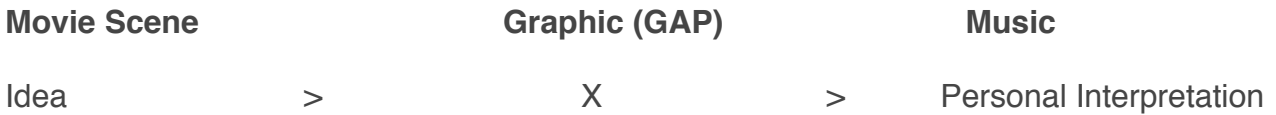
Why am I moving towards the use of signs for the sharing of an Idea?

Why does a complicated semiotic language, like the musical notation for example, speeds up the process of communication of the subject itself?

Simple. Because is extremely clear and detailed!

3. METHODS.

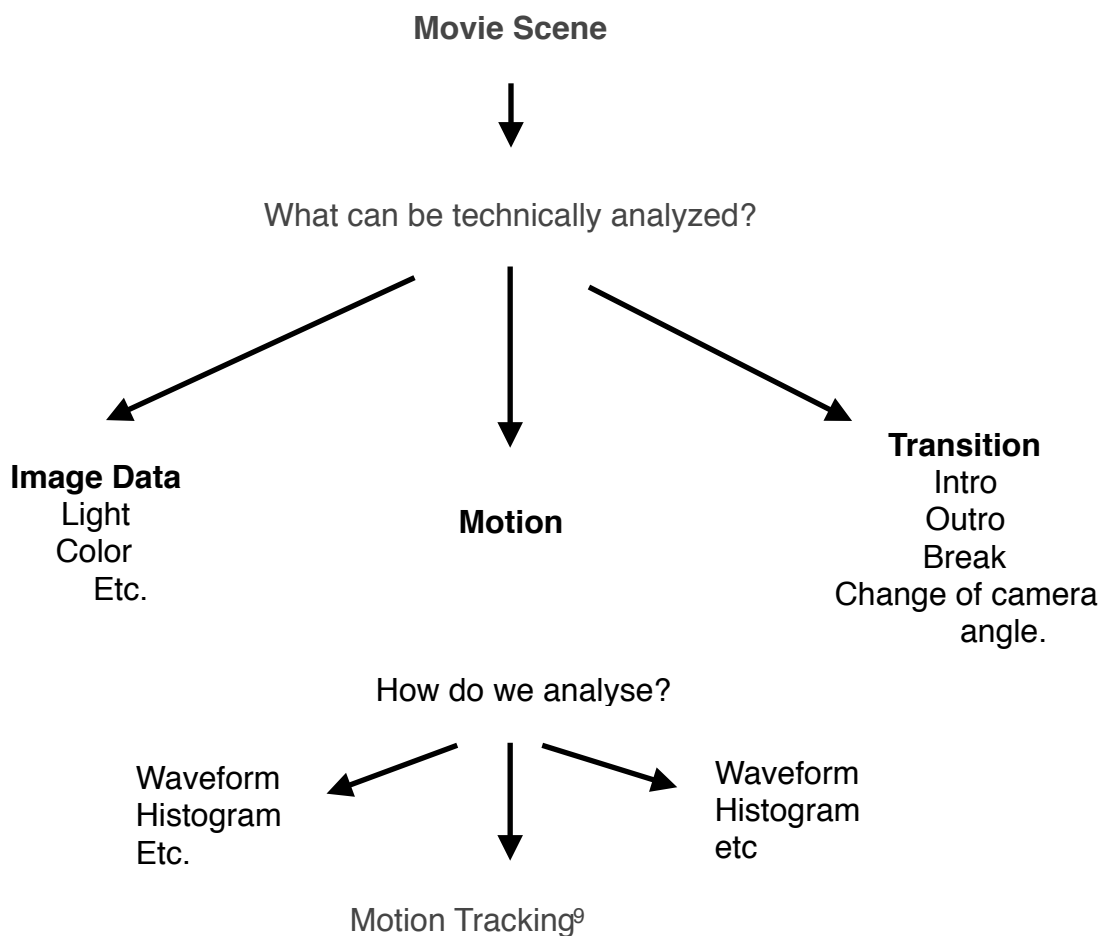
Based on this idea, we would need to build a new form of “pentagram” that would stand between the idea for the music of a movie scene and our personal interpretation.



A movie scene is already a group of signs and symbols, so I am going to analyze what are the aspects that alternatively we could relate to, when writing music.

Since all the theoretical aspects of a movie scene, are exactly what we use when we normally write music for a movie then I am going to focus my analysis of what information is left for us to be interpreted in a movie scene.

And more exactly, which aspects could be translated into signs and symbols.



⁹ **Motion capture (Motion Tracking in the essay)** is the process of recording the **movement** of objects or people or camera within the movie. In many fields, motion capture is sometimes called **motion tracking**, but in filmmaking and games, motion tracking usually refers more to **match moving**. Wikipedia - *Motion Tracking*

4. HANDWRITING AND ITS THEORIES .

To be able to go deeply into the thought I had to start writing and see where it would bring me. The handwriting will be of main importance for my whole research because it will allow me to instinctively follow my questions and idea through its own curiosity and contradiction. It will help me explore why I am questioning the question.

An appendix is attached with all my scanned handwritten drafts. Follow the notes below the pictures.

4.1 Examples of Video Data Analysis.

This is how I started.

- First, I have imagined how the analysis data of a video would look like when translated in time into semiotics.

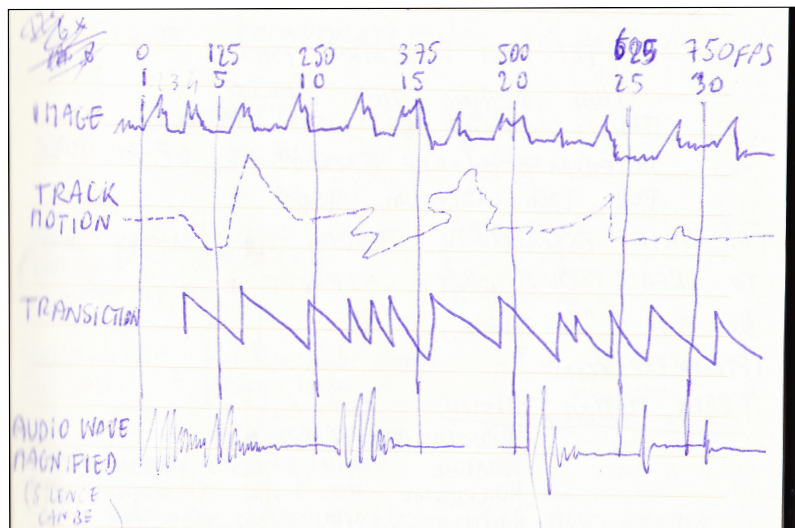


Figure 1. Page 4 in Appendix. Hypothesis of image data pentagram.

My next question is:

What does image data, motion, change, and steadiness mean musically for me and what other aspects could be extrapolated from a movie scene ?

4.2 Motion tracking.

- I have instinctively drafted theories of what the waves of image data could mean for me and the types of motions that can be analyzed with motion tracking; Tridimensional, vertical, horizontal, panning, random, steady, curve, fast, slow, stress, etc.

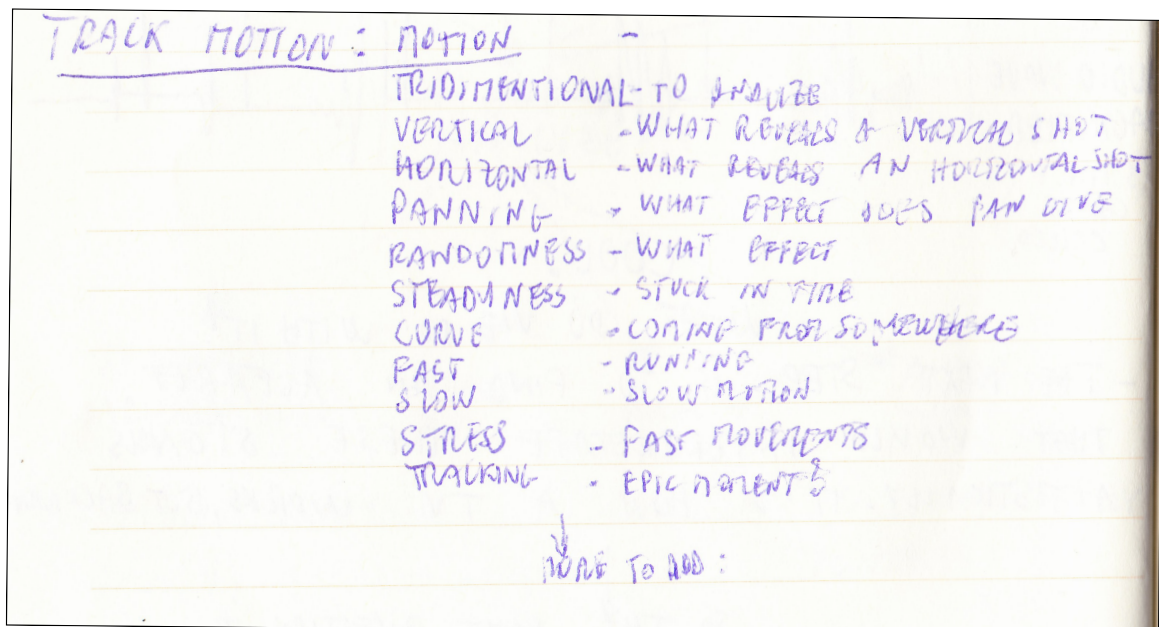


Figure 2 . Page 5 in appendix. **Dynamic aspects of motion tracking analysis of an image.**

I have imagined how all these dynamic aspects of image data analysis could influence, inspire or guide alternatively my music composition.

During the process of brainstorming ideas it is necessary for me to include quick examples of how I would interpret aspects of the image data. Actual real application of my ideas of new methods will be applied further on in the thesis.

4.3 Vertical Motion.

- My next question is:

What does movement and non movement means for real in an image, and how can I interpret it in my music composition? Even further, how can I refer my music composition to motion in space?

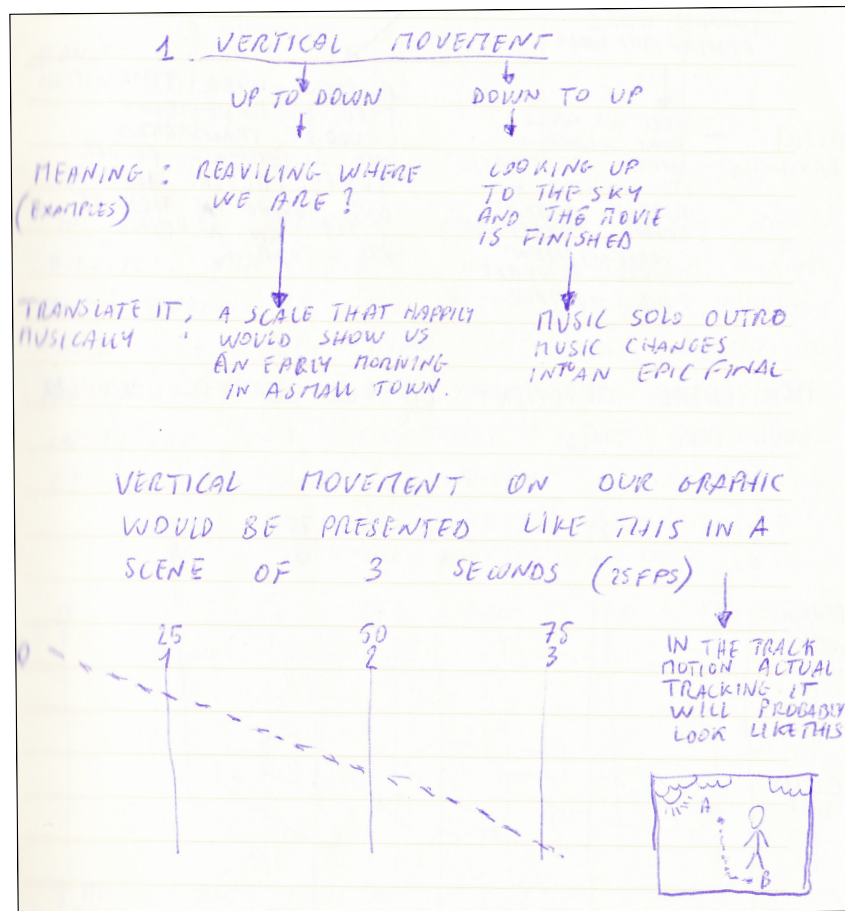


Figure 3. Page 6 in appendix. Theory of vertical movement interpretation and translation to graphics.

I have impulsively drafted examples of what vertical movement could mean musically for me and how it would look on a graphic.

I could interpret vertical motion in any direction, as a musical scale for example. Or into a music solo that outros to an epic finale. Keep in mind that at this point I am exploring possibilities of communication between different languages, I am not focusing on actual interpretation.

4.4 Horizontal Movement

- Same process for what it concerns horizontal movement. I have written examples of what it could musically mean for me and how it would look on a graphic.

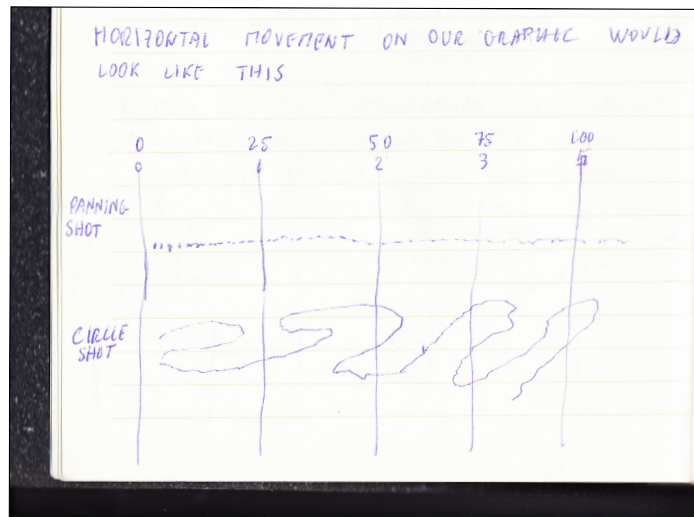


Figure 4. Page 7 in appendix. **Hypothetical horizontal motion graphic.**

If the lines of my hypothetical graphic, representing motion tracking, would look straight horizontally, then I know the movie scene has very little camera dynamic into its motion.

A horizontal motion in the scene could mean a revealing moment, or the following of a subject for example. That's what I think about when I imagine a horizontal motion into a movie scene. I am looking at the ocean and after the motion I am looking at the horizon.

I could translate that into a music arpeggio for example, that does not evolve harmonically but that dynamically stimulates what is happening next.

4.5 Random motion

With a random motion represented in the graphic I would catch directly the presence of some kind of stress in the image. Musically I could translate that into a fast change of chords for example, an uptempo beat, a moment of fast musical motion.

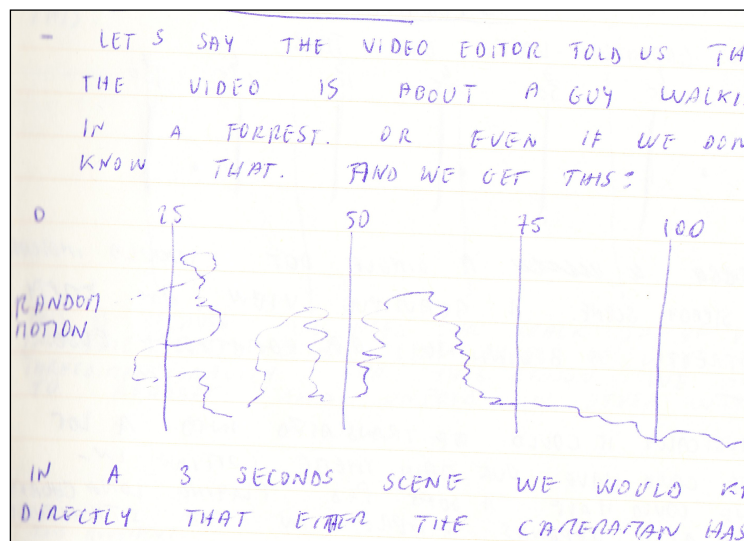


Figure 5. Page 8 in appendix. **Random motion graphic.**

The random motion represented on the graphic over a longer period of time would indicate me that there is great dynamic in the shot, but not as stressy as if it would be representing a 2 seconds scene for example.

4.6 Steadiness

A single dot in our graphic could indicate a steady scene. A beautiful view, an empty street. Usually it's when it begins something that they show you steady scenes, it's when you see the environment.

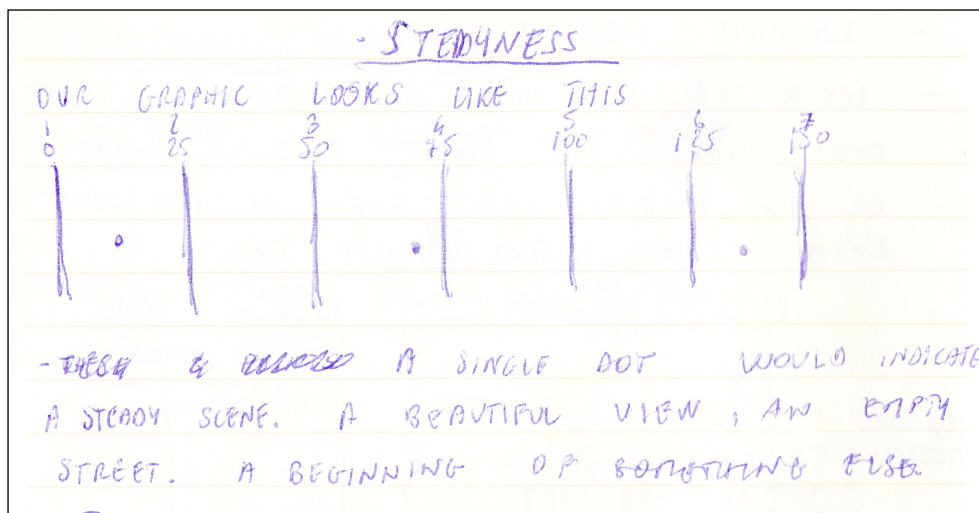


Figure 6. Page 9 from appendix. Steadiness represented on graphic as a dot.

Steadiness could be musically translated into a lot. It could be my reference for when my main theme of the scene or movie comes in back and fourth. I could refer it to something of not great dynamic. Such as playing open chords, soft music, or having no music.

In a movie scene a steady shot or tripod shot it's usually something done in the beginning of a scene for example or the showing of the environment. It creates the mood for the rest of the play.

4.7 Transition¹⁰

The transition sign would work as some kind of guideline into our “pentagram” because it will tell us when something starts and ends and how fast or slow our scenes will change.

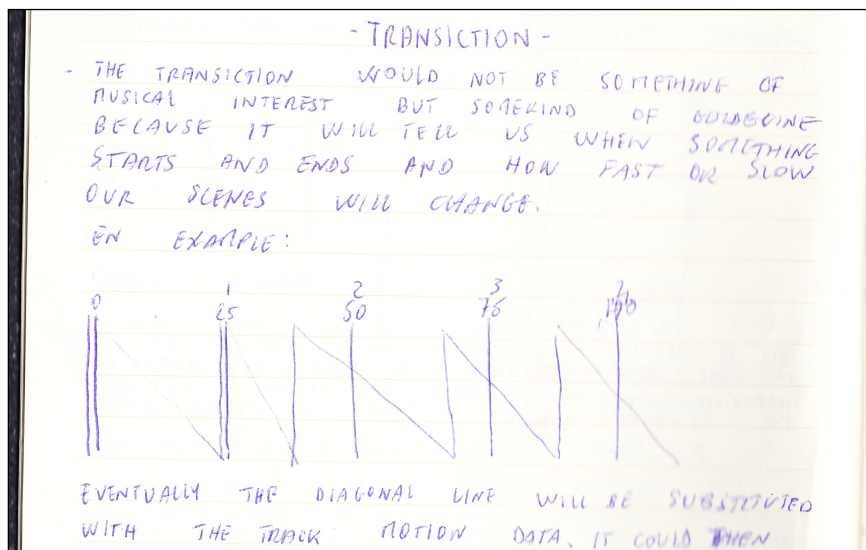


Figure 7. Page 11 from appendix. **Transitions.**

These is an example of the graphic including vertical track motion and transition.

¹⁰A **film transition** is a technique used in the [post-production](#) process of [film editing](#) and [video editing](#) by which scenes or [shots](#) are combined. Most commonly this is through a normal [cut](#) to the next shot. - Wikipedia - *Film Transition*.

4.8 Example of graphic including all the above analyzed dynamic aspects.

- Down to real examples, where a scene analyzed gives me this motion information:

Horizontal > Horizontal > Steady > Vertical > Random

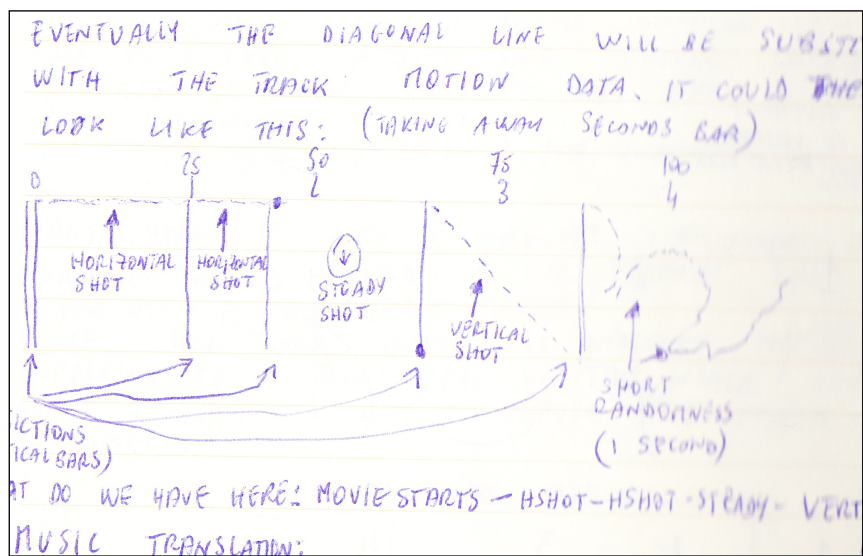


Figure 8. Page 11 from appendix. Example of graphic.

As I have understood at this point I could be able to create, find and relate proper musical aspects for each type of camera shot/ movement, etc. , and obviously that would be something very subjective, but it would alternatively stimulate artistic momentums.

I have highlighted from the attached appendix, only those main aspects that I could easily translate into a method. Although the process of going deeply into the flow of writing is what has helped me coming further to new questions regarding the subject.

5. POST HAND-WRITING.

Based on my graphic theories, a simple movie scene of 1 minute could turn into something looking like this. This is my actual sketch, drawn while looking at the tracking motion information which I will later on analyze from a short movie scene from me filmed.

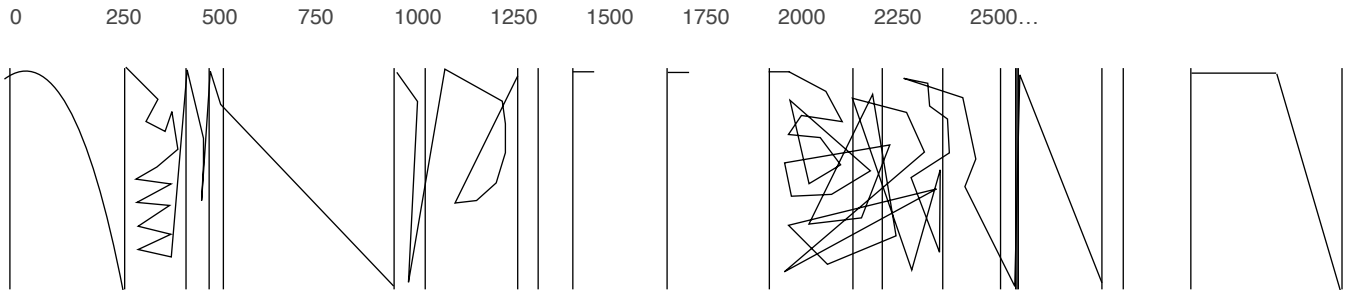


Figure 9. Page 20 from appendix. Actual video data analysis transformed into graphic.

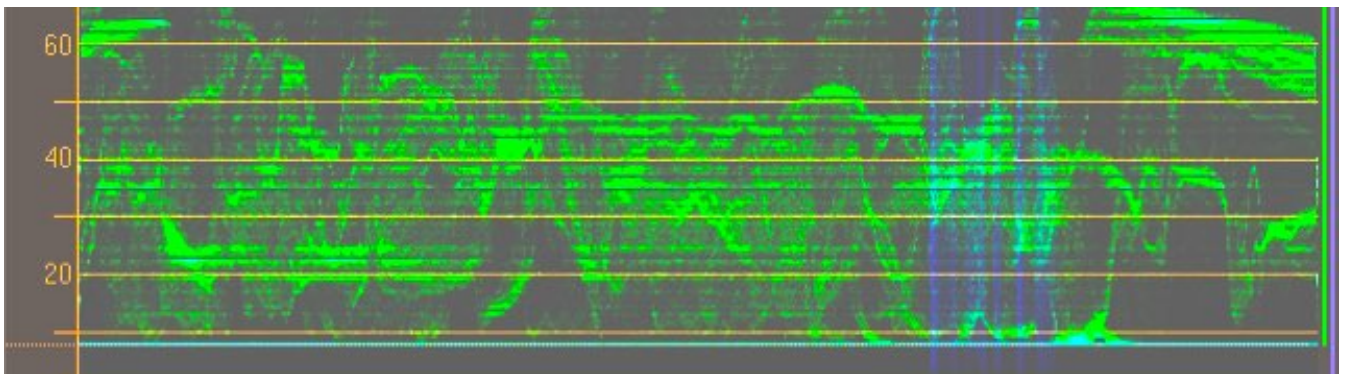


Figure 10 & 11. Page 20 from appendix. Screenshots of “light” information of the scene.

- As mentioned in my drafts the straight lines in the “pentagram” stand for the scene transitions.

lines in the “pentagram” stand for the

- The shaped lines movement



in the “pentagram” stand for “track motion”, or camera

- There are then several types of video scopes waveforms and they all show different parameters of the image, like the gamma, the luma information, the shadows, the mid-tones, the highlights, darkness and light and so on.

—

I have understood that for me to get musically interpretable information from a video waveform I would need one that shows me the total amount of information of the whole length of the scene.

But during these months I was not able to find a way to achieve that, so attached you will find a video of the Luma scope in action. (screenshot below)

- Attached as "Luma Scope Video".

As you will be able to see from the video, there is a huge amount of, let's call it "alternative information" of the image. I will then later on use that information, combined with my motion graphic, on a music composition for the video.

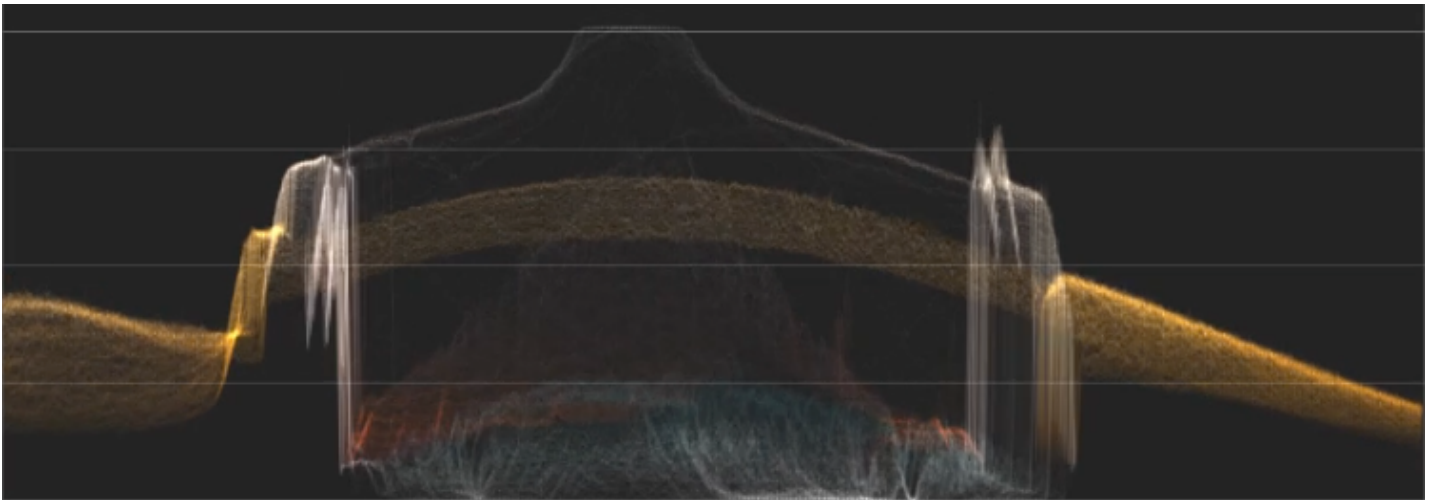


Figure 12. Page 21 in appendix. Screenshot of video of Luma scope data.

- I have chosen the Luma Scope because as you can see from a screenshot we get information of Motion combined with Luminance, Light and Color.

At this point of my research I have found aspects and created a new form of “pentagram” which technically translates “alternative interpretable image data” into interpretable semiotics.

Our new “pentagram” (I don’t dare at this point giving it a name..) includes at a certain level, some aspects that helps me alternatively in the music composition for a movie;

- **MOMENTS**

The transitions (straight lines) visible on the graphic, tell us when a camera angle is changing. We can then use these guidelines to enhance music momentum for example, or to know where to start, change or end. Or even to plan our musical composition of a scene over time.

- **DYNAMIC**

The motion on the graphic (shaped abstract lines) give us hints of camera movements. We can locate steadiness, normal camera movements or stress/shake camera movement, etc.etc.

- **THEME**

Looking at the whole graphic and the luma videoscope we can get an idea of the overall dynamics and theme of the scene.

We can determine for example, based on our highlights on the graphic, that the scene has strong highlights, or even more creatively, interpret the growing of the highlights through the whole scene, as an opening of high frequency on our music, in time.

6. PRACTICAL APPLICATIONS .

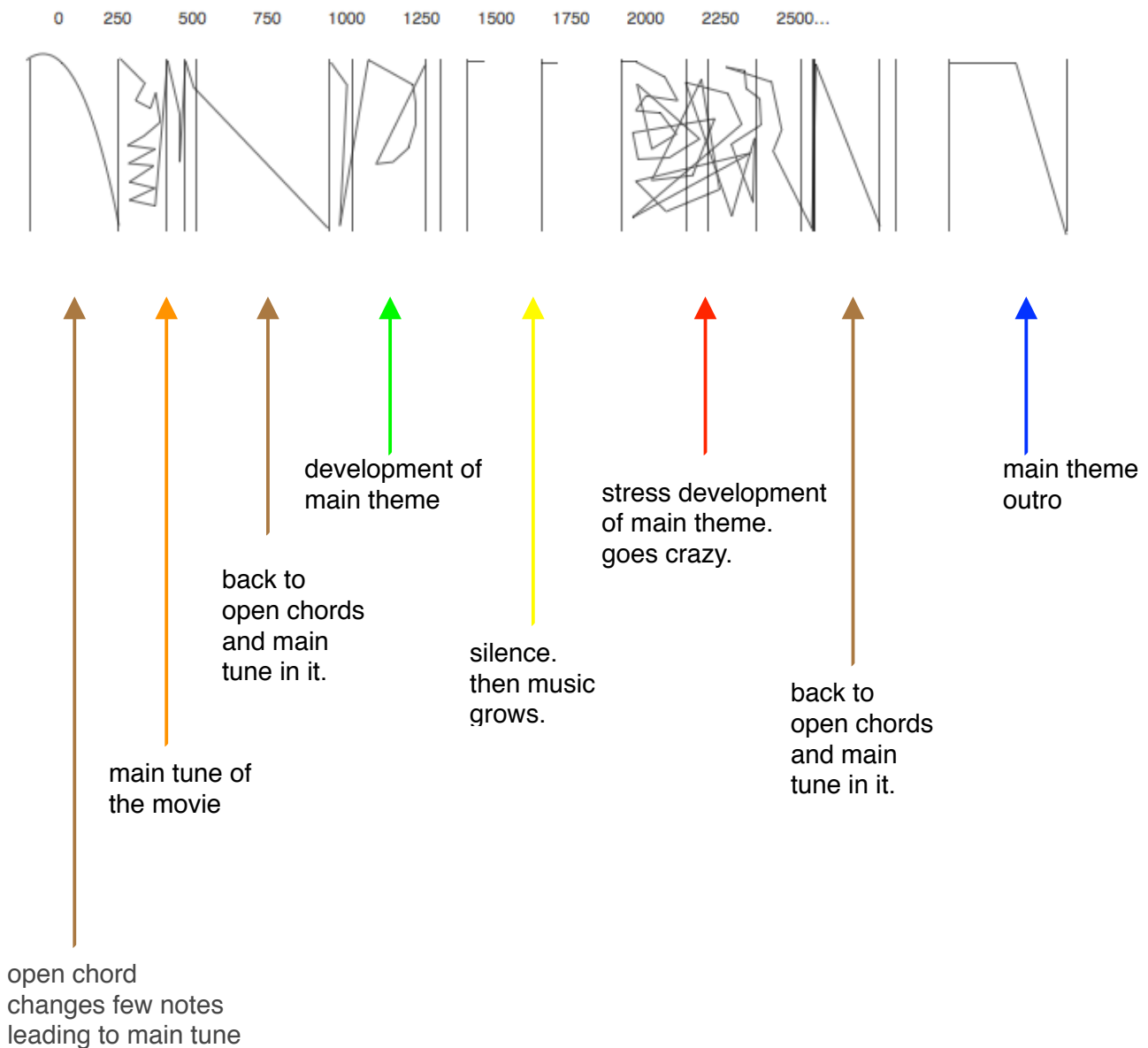
VIDEO AND MUSIC EXAMPLE .

Now,

I myself have shot a simple example of a movie scene or fragment/short movie.

- Attached with the name "Video and Music Example".

I am now going to write a very simple piece of music for the whole video using my "pentagrams" as the guidelines for the dynamics of my composition, interpreting my choices as shown below.



7. RESULTS.

I have tried to keep myself as far as possible from the image, during the shooting and most importantly during the experiment.

I can say that already the fact that I was able to use an extra “sense” for my composition has inspired me.

I am sure most interesting results would be achieved if the composer would be completely unaware of what the picture is showing, but in this case, during the research, it was impossible to test the video without having to analyze it myself.

As I have described above, the choices in the dynamic of the music were taken by looking at the “pentagrams” and I have found very interesting how I was able to relate the dynamics by looking through the peek-hole of a movie, not the movie itself.

—

It would have been very interesting to have this test sent by a movie director and get a feedback on the composed music, without having looked at it.

Unfortunately I was not able to extrapolate exactly all of the image data as I was hoping to, because as I have mentioned earlier, in the case of the scopes (waveforms, histogram, luma scope, etc.) I would have needed a histogram that would resume in a single frame the waves of the whole length of a videoclip.

I didn't focus on what the movie was about, or how the sound would relate to the image itself.

I have simply chosen the first sound available on my DAW and sequenced a few notes, and used automatization and reverb for all the dynamics on correspondence of what the “pentagram” was showing.

Even if I moved away the focus of my creative process from what is happening in the scene, by not looking at it during the composition, I think my mind was influenced on having to compose something that we could define a dark tune because I knew that the scenes were odd, nonsense, and I think my mind worked subconsciously on giving a sense to the image.

Very interesting the fact though that the dynamics for me had a flow throughout the whole scene, since what I was focusing on was the track motion in my pentagram.

8. REFLECTIONS.

At this moment of my research I have understood that yes it is possible to analyze image data in various ways and interpret it in infinite ways.

What is left to understand is what difference occurs when composing music looking at an image or looking at the data of an image.

Movie Scene Content



Movie Scene Data

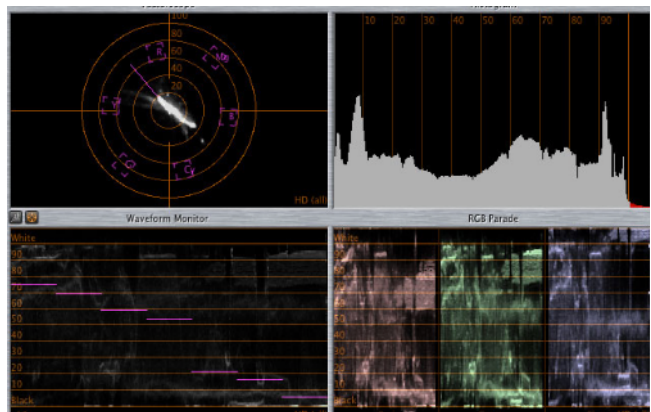


Figure 13 & 14. Page 22 from Appendix. Random pictures from the internet of a movie scene and of image data.

I started from the idea that we are trying to use and perceive a sense through another.

We don't want to be influenced by what we see, but rather guided, because if we are composing for someone else emotion and final idea, we are being guided.

We want signs, dots and lights that tell us to try to see something. That don't kill our creativity but stimulates it. That tickles our momentums.

This whole research is about that moment of human interpretation of senses. Is about finding the thin line that divides what we see, hear and touch from what we interpret and perceive, so that we can leave our creativity go freely.

A normal musical notation, or pentagram, it's something that visually guides the musician in the reproduction of someone's else musical composition, itself born from an inspirational momentum. " **Music notation** or **musical notation** is any system used to visually represent **aurally** perceived **music** played with **instruments** or **sung** by the **human voice** through the use of written, printed, or otherwise-produced symbols, including ancient symbols or. "¹¹

¹¹ Wikipedia, *Musical Notation*.

It is detailed in the most possible way, and accompanied by an orchestra director, reaches the most possible dynamic reproduction of a music piece.

It makes it possible for a musician to go from:



A movie scene on the same hand , makes it possible for a director to go from:



Even if the movie scene, or movie, will be the exact reinterpretation of the director idea, the director starts imagining his final work basing his ideas on a story, a place, an image, an happening.

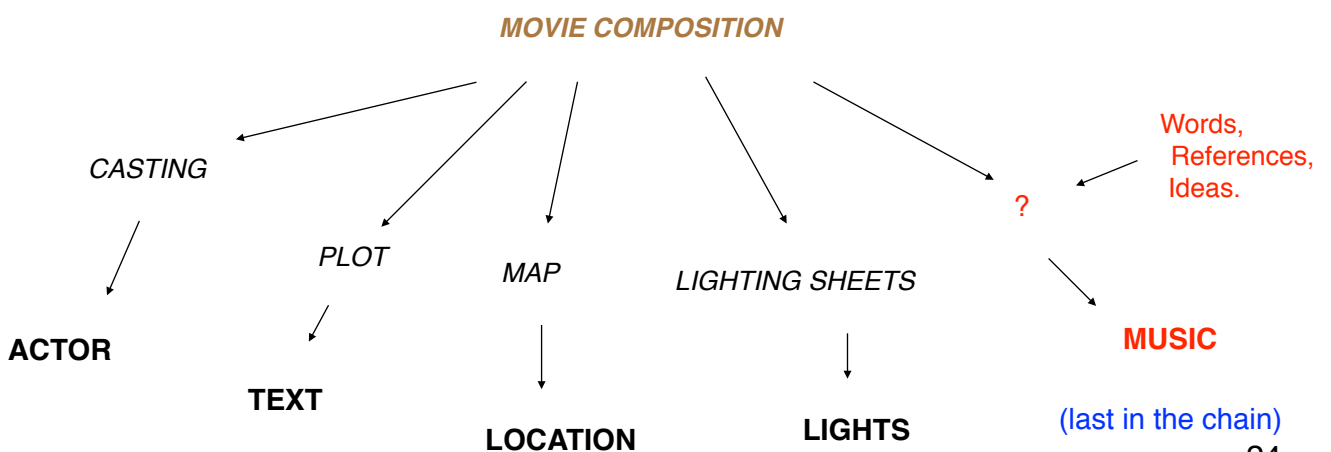
And, exactly in this very first MOMENTUM, when the idea is getting birth, he might rarely think about the music as a main role in the scene. Neither will music play a determining role in the shaping of his idea, in his brain.

The musician composition , or idea, instead, thanks to the musical notation/pentagram, is shared exactly as it was born, in its wholeness, to its most dynamic detail.

The movie composition, even including musical references, or explanation, when it has to be shared lacks of detail in dynamic.

In the process of creation, the emotional and detailed musical aspect of the scene stop right after the director has imagined the whole scene.

It will be saved in his mind or on his desk as, “Michael Jackson’s Thriller type of music for scene with the motorcycle”.



9. FINAL WORDS .

At the end of the research I am still walking backwards.

As you can see from the above example is that the director is missing a tool in his communication plan.

To be able to have his movie complete he is able to share in detail most of the aspects that represents his scene/movie.

He is of course able to explain his ideas for the music, but even with the most detailed explanation he will never be able to have his idea extended perfectly to its musical part at its first shot.

We, being the music composers will immerse ourselves into the final image, listen to the director's guidance and let our creative momentum start. And that will of course work, at first try, or in the end.

What I have been trying to research during these months, is to try to find new aspects that would alternatively stimulates my composition, help me getting inspired, avoid being influenced from what I see, or perhaps even guide me. And with further studies, that could tell me if I would subconsciously go closer or further to the director's emotion.

Music and sounds are the second most important part of a movie, but during the production process are always the last to be applied, and this makes me understand the width of the subject; that there is so much to study and learn about.

During these months of work I have continuously wondered about what this meant to me, and if I was going to be able to get anything out to the whole thought.

At this point I have understood that what was important for me to explore, is the idea that even if I will aim to work in the business, I will never try to work by doing what "it should be done", but doing what I feel, even if that won't bring me anywhere.

I could have read 1000 books written by other composers and try to immerse myself in the real world of music composition for movie, but by doing that I would had gone exactly in the opposite direction.

Because I think we have to stimulate the unknown, we have to let the meaning of art standing for what it is. The more the ages pass, the more people is capable, to express any form of art.

It is something rather common that a movie director is the music composer of his own movie, or perhaps even the actor. And this is where we naturally go, into possibilities, the more tools we have, the more art we do, the less inspiration we have, the more tools we built.

And I thought that if I wanted to write and explore into something, I would do it about those things that seem to be so simple to be explained (like music composition for movie in this case) but that hide huge processes of creativity, triggers our whole brain, or perhaps a single minute of inspiration, or a 3 months long mail correspondence, or maybe even just a second of inspiration and sharing of an emotion, a feeling or idea.

The creation of a final beautiful work of art, as a music piece or a movie for example, is usually either the birth of our deeper or higher inner moments, or the joining of 2, 5, 10, 100 people that for some reason are lucky enough to work on something beautiful together, they understand each other, empathize each other, and create an unique art out of it.

For this reason, if we keep creating tools, study language, strengthen communication, we will be able to meet each other more, and share our artistic momentums more freely.

10. BIBLIOGRAPHY

Dictionaries:

<https://www.wikipedia.org>

Media:

(Figure 13 & 14)

<https://www.google.se/>

Digital Editing Programs:

Final Cut Pro

Logic Pro X

Attachments:

Appendix

Handwritten drafts

Graphics

Screenshot

Images

Video and Audio Files

Video and Music Example

Luma Scope Video