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Equipoise: An Animated Short Film About Positiveness and Negativity.

Gung-Kai Koo
gk3240@rit.edu

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EQUIPOISE

An animated short film about positiveness and negativity.

GUNG - KAI KOO

A Thesis submitted in partial fulfillment of the requirements for the Degree of Master of Fine Arts in Visual Communication Design

School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology
Approved on May, 2016
Thesis Committee Approval

Project

Equipoise - An animated short film about positiveness and negativity.
MFA Visual Communication Design
School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

Approval

Chief Adviser
Daniel DeLuna, Associate Professor
School of Design
Signature
Date

Associate Adviser
Chris Jackson, Associate Dean
School of Design
Signature
Date

Associate Adviser
Shaun Foster, Associate Professor
School of Design
Signature
Date

School of Design Administrative Chair
Peter Byrne
School of Design
Signature
Date
Thesis Committee Approval

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Equipoise is an animated short about positiveness, negativity and the opposite but complementary relationship between them. The two opposite attitudes of an individual's personality not only affect but also establish emotions, decisions and behaviors. Positiveness reinforces positive thinking while pessimistic assumptions and hardship are driven by negativity. A person who has an imbalanced mind may live in pain or lead to high risks.

To have a great mental condition, both positiveness and negativity have to be involved to establish the balance. However, the importance of negativity, in one case, pessimism was frequently ignored as a result of education that focuses on positiveness or optimism for most of the time. The animated short Equipoise depicts the complementarity of two forces and introduces the concept of balance from an objective standpoint. The two forces are balancing for different circumstances and no matter who is leading, the other is always supporting.

Keyword

Design
Computer Graphics Design
Motion Graphics
Psychology
Positiveness
Negativity
Mental Wellness
Mental Balance

Positiveness and negativity are two complementary forces that affect human emotions and behaviors. An over-pessimistic person interprets situation and possibility with too much sense of failure and risky, on the other hand an over-optimistic person ignores existing problems and dangers, which also makes one’s life experience insecure. Therefore, in order to have a healthy balanced mental condition, relying on only one of them is not recommended.

However, the importance and necessity of negativity are being ignored frequently because in a lot of cases, positiveness is emphasized with bias. To present their existence from an unbiased standpoint, the two attitudes and their characteristics and points of view are introduced. Following that, the short depicts how they complement each other to stimulate the form of actions to respond to an event. To reinforce visual communication, the two forces were designed as illustrated cartoonish characters.

The story of the project was designed as an abstract fantasy that was composed of cartoonish 2D illustration that hints the philosophy of mental balance. It differed from traditional scientific videos that contains accurate and detailed information of a subject for education, instead it is relatively obscure and also pursues artistic and entertainmental values with motion design. The film also shows my respect to 2D animation and the open ending gives audience more space for personal judgment.

Overview

To accomplish the project, three main directions were focused while researching – scientific, aesthetic and technical.

Scientific journals were collected for understanding how optimism and pessimism function as well as the roles they play psychologically and physically. For aesthetics inspiration, design principle, character design and illustration resources were found from the RIT library. At last, books and resources of used software were collected for technical support.

Scientific

- **The neural basis of optimism and pessimism**
  David Hecht
  Experimental neurobiology, 09/2013, Volume 22, Issue 3

  According the journal, researchers have suggested that optimism and pessimism are associated with different cerebral hemispheres — the left hemisphere provides the positive feedback while the right provides negative thinking. It also explains the relationship between the two attitudes and mental condition with clear definitions of characteristics of each, such as self-esteem and risk-taking.

- **Optimism and Pessimism: Implications for Theory, Research, and Practice**
  Edward C. Chang
  American Psychological Association 2001

  The research reveals the study of examining the universal beliefs of the costs of pessimism and the benefits of optimism. It emphasizes the importance of balance of optimism and pessimism. This examination includes biological and psychological research as well as cultural factors to discuss the tension and harmony that are caused by the two different attitudes in daily lives.
**Review of Literature**

**Aesthetics**

- **Cartoon Modern: style and design in fifties animation**  
  Amidi, Amid, 2006

  The book introduces sketchy cartoon character designs during 1950s. The book has clear information of stylish cartoon characters from sketches to colored illustrations with different poses. Many examples of them are simply design with flat colors and geometric shapes. The book was inspiring and helpful when visualizing the original design.

- **Japanese motion graphic creators 2013**  
  Shouno, Yusuke, 2013

  This is a great book that collects a hundred active famous Japanese motion designers and their works for research and inspiration. Each designer was introduced with their design and style frames of their representative works. It was helpful to analyze the color scheme, composition and layout.

- **Color in motion: the challenge of color in multimedia design.**  
  Electronic Composition & Imaging, 09/1995, Volume 9, Issue 3

  The article explains the importance of color in motion design and the keys of designing with the good color choices to highlight the scenes and movements. It also introduces the general interpretation of human when looking at colors. It was an inspiring tool and a good guidebook about color choices. It also provided constructive knowledge about researching the influence of colors in an artwork.
Review of Literature

Technical

• Creating Motion Graphics with After Effects
  Meyer, Chris, 2010

  This is a great guidebook for strong technical support with Adobe After Effects from essential manipulation to advanced functions, filters and visual effects. It not only explains the functions but also lists tips and hot keys, enabling users to learn about not only just using the tool but avoiding possible mistakes and to improve efficiency.

• Motion Graphic Design: Applied History and Aesthetics
  Krasner, Jon S, 2008

  This book explains how to add values to a motion design piece based on aesthetic and communication qualities. It also emphasizes the importance of ideation and planning. Instead of providing technical support as Creating Motion Graphics with After Effects, this book is more about analyzing composition, layout, color and storytelling.

• Motion graphic design, fine art animation: principles and practice
  Krasner, Jon S

  This is another book for aesthetic concepts and practical techniques that are applied to motion design and animation today. It leads the reader to investigate imagery and typography that are designed over time and space. The book works great with Motion Graphic Design: Applied History and Aesthetics, helping designers to refresh visions and refine processes.
Design Process

**Thesis Parameter**

- Presentation: Animated Short
- Format: Full HD 1920x1080
- Length: 180s
- Frame Rate: 30 fps
- Compression: H.264

**Tools and Software**

- Adobe After Effects
- Adobe Illustrator
- Maxon Cinema 4D

**Target Audience**

The video is expected to be entertaining to the public thus it is targeting all genders and mostly focuses on 12 to 40. It conveys significant art and design values that are expected to be appealing to art and design field. The Education Level is expected to be higher than 8th grade.

**Concept**

*Equipoise* derived from *Horn*, an interactive children book about mental growth and self-identification. *Horn* was shortly abandoned but it had finalized the decision of choosing a psychological topic as *Equipoise*, an animated short about positiveness, negativity and mental balance.

The storyboard had been constantly revised and became a combination of motion design and animation with an entertaining storyline instead of a scientific, educational piece. The focus of the video was the necessity of the two attitudes and the importance of their complementarity. The story offered an open ending that gives the audience more space for judgment and interpretation.

<table>
<thead>
<tr>
<th>ORIGINAL CONCEPT</th>
<th>FINAL CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasizing the characteristics of the two forces and how they try to dominant each other but found that they should work as a team at the end.</td>
<td>Emphasizing the complementarity and how the two forces support each other to be prepared for the stimulations and future changes.</td>
</tr>
</tbody>
</table>
To create a better narrative storyline for the animated short *Equipoise*, a good amount of constructive feedback was collected after analyzing the structure of several famous animation and motion design pieces. The process was mathematical and it was interesting to break a project into different sections based on the content and timeline (Fig. 1). Then, by calculating the percentage of each section in a project, the knowledge of a balanced structures was gained. To optimize the structure of the thesis project, the structure of *Equipoise* was compared with previous case studies, then was redesigned based on the collected data.

### Case Study

To create a better narrative storyline for the animated short *Equipoise*, a good amount of constructive feedback was collected after analyzing the structure of several famous animation and motion design pieces. The process was mathematical and it was interesting to break a project into different sections based on the content and timeline (Fig. 1). Then, by calculating the percentage of each section in a project, the knowledge of a balanced structures was gained. To optimize the structure of the thesis project, the structure of *Equipoise* was compared with previous case studies, then was redesigned based on the collected data.

**Figure 1**
Structure analysis of animation
*Day and Night.* 2015.11.
The original storyline was similar to Day & Night by Pixar and focused on the two main characters and their interaction. After redefining the target and storyboard, the project was redesigned as a narrative fantasy with a third person viewpoint. The story became more abstract and artistic with metaphors and symbols to emphasize the importance as well as the necessity of the two forces and their complementarity when facing stimulation and future changes.

- The story started with an introduction of the birth of the two forces. The two forces started functioning and became opposite existence.

- This part revealed more information about the characteristics of the two forces – positiveness and negativity, such as energy and carelessness from the former as well as the calm and passivity from the latter. In this section psychological idioms were applied to emphasize different points of view from different attitudes. One of the most well-known case in the animation was *Is The Glass Half Full or Half Empty*.

- The third part focused on the moment when an individual received a stimulation that would have an impact to the future possibilities of an individual. The two mental forces started complementing and balancing in order to find the solution to the stimulation.

- The forth part emphasized the process of balancing. Positiveness and negativity understood that they needed to work together to confront the upcoming changes.

- At the end of the animation there was an open ending for audience to make their own judgment. By standing in front of the unknown future changes, the two forces integrated the experiences and knowledge and were well-prepared to confront the stimulation. The open ending was designed to show the importance of the balancing process instead of judging the tendency or preference.
Design Process

Naming

While the implementation of *Equipoise* was going, the naming process was a big challenge.

- **Phase 1 - OPPO**
  At the planning phase, the project had an unconfirmed name OPPO, by using the fist letter of optimism and pessimism. The original idea was showing O and P could be mirrored from the center, but also standing together. The word meant friend in British slang and also reflected the core of the concept that the two forces are complementary.

- **Phase 2 - X+Y=1**
  The name was redesigned to create an abstract feeling while the visual elements were getting more surreal. The name conveyed the idea of Yin and Yang, which are always balanced and complementary. It was not considered anymore since it could lead to a biased judgment.

- **Phase 3 - Equipoise**

  *equipoise* Font - Linotte Semi Bold

*Equipoise* is an existing word that has been using since 1650s, meaning “balance of forces or interests.” Equilibrium is one of its synonym.

By comparing different rounded typefaces (Fig. 3), Linotte Semi Bold was selected for the title. The structure of *Equipoise* (Fig. 4-5) presents a great visual balance with two letters I decorated as the symbols of the characters. The letter O and P stand for the first letters of optimism and pessimism respectively, reflecting the general assumption of the forces’ true identities, creating a strong connection between the film and its concept.
Design Process

Figure 3
Typeface candidates of the tile of Equipoise.

Figure 4
Structure details of the title.

Figure 5
Final design of Equipoise’s title, 2016.05
Design Process

At the early stage the story was designed based on a lot of character animation that contained a lot of interaction and possible fighting scenes to illustrate the process of balancing between the two forces (Fig. 6). Although the final design differed from this early setting, the ideas from this stage was important to lay the foundation of the storyline and the general direction of the final design.

Figure 6
The storyboard at the early stage, 2015.12
In the latest version of the storyboard, the storyline was simplified and removed some scenes with heavy character animation, making it more straightforward as a linear narrative (Fig. 7-8). Many transitions were redesigned to enrich dynamic nature of the work. Meanwhile, the visual design of the characters and scenes were redefined to be simpler, more abstract and surrealistic.
Figure 8
The general look of the final storyboards, 2016.02
Design Process

- **Phase 1**
  At this phase the structures of the characters were more geometric and with flat color design. They also had personal accessories to emphasize their characteristics (Fig. 9-10). The proportion of digital outputs was adjusted and became shorter compared to the sketches.

Figure 9
Sketches of character design, 2015.12

Figure 10
Polished character design. Created in Adobe Illustrator, 2015.12
· **Phase 2: Redesign – Sketches**

Other candidates with different styles were produced while a refined, simpler alternative of the first version was being created (Fig. 11).

**Figure 11**
Sketches from character redesign process, 2016.01
Phase 3: Final Design - before adjustment

The final design was simpler and their bodies had both geometric and organic structures with monotonic, complementary colors. (Fig. 12)

Figure 12
General direction of the look for the characters based on the selected candidate from redesign process, created in Adobe Illustrator, 2016.02
**Design Process**

**Phase 3: Final Design - after adjustment**

Reductions have been made while making the animation. There are slight changes for their appearances and proportions (Fig. 13-14).

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**Character Design**

4 of 4

Figure 13
Final adjustment of the character design, 2016.02
Design Process

Figure 14
Illustration of the characters, created in Adobe Illustrator, 2016.05.
After the general direction of storyline and characters were decided, the design of environments and visual elements were the next steps to bring *Equipoise* to the next level. By using patterns and shapes that reflect organs and human bodies, it would be easier for the audience to find the connection between the film, psychology as well as biology. Besides, artificial elements were also introduced to the scenes, such as gears, tubes and sensors, implying that there is a system or an inner world in the film. By mixing organic and mechanical elements, a surreal environment was built to support the story and characters (Fig. 15).

The general look of the design was revised again and again during the implementation. As the comparison on page 20, the final look has become much richer by adding ambient lighting and gradient to the elements (Fig. 16).
Figure 16
Comparison of the design of early stage (a1-a4, 2015.12) and final look (b1-b4, 2016.06).
For the main color groups, yellow conveys the brightness and energy from positiveness, while blue presents the calm and sadness from negativity. These colors were not only applied to the main characters, but also some parts of symbols and background.

**Yellow Color Group**

**Blue Color Group**

Secondary color groups were mainly applied to backgrounds and other visual elements, a coral color was chosen to represent human bodies and organs for biological hints. Then a dark purple was used to express the mystery of the story and to vivify the visual.

**Coral Color Group**

**Purple Color Group**
Design Process

3D Modeling

In order to achieve the planned aesthetics and motion design, 3D cameras and objects were used in the animation with the support of Maxon Cinema 4D. The structure of the models are constructed as simple as possible to reach the expected quality (Fig. 19). The making of 3D objects was succeeded by using primitive shapes or splines and the posed characters were built with primitives and extrusion.

For the mountains, the Landscape object tool was used to create the general look then the model was converted to an editable mode for detailed sculpting. The DNA ladder and the stairs were both generated with a cloner object in cinema then made to an editable mode to finalize the details. These two models needed to be made in different rotation methods to create the twisted and spiral look respectively. The twisted object was used in the ladder. However, for the stairs, the spiral rotation was generated with the Step Rotation parameter of the Cloner object.
To achieve flat looks in 3D for matching the visual style, it was really important that luminance was the only activated channel so the output would have a flat color display without gradient or diffusion that exists in real world. Cel shader from the Sketch and Toon module was applied to the models so that the object would be able to have shadows, diffuse or specular based on the camera angle or light sources with assigned colors that reflect the level of brightness. For example, lighter and darker coral colors are assigned to the shading, generating a flat-colored render with depth (Fig. 20, a). The first category was used for 3D objects and each object only required one color so the making was straight forward but the model needed to be converted to an editable mode because with the Cloner object, the cloned objects are all parented to the original object and couldn't be textured individually with a customized pattern. For the DNA ladder, the chosen color palette is also used on the main characters and the coral colors are used to smoothen the transition from vessels to the DNA chain (Fig. 20, b).

For the texture of 3D particles, the output could have two or more colors to stylize its temperature and brightness. These features could be achieved by adding the Cel Shader as well. By adjusting the knots on the color band that reflect the level of brightness, a two dimensional display was created.
The whole animation was mainly done in Adobe After Effects without third party plug-ins. As planned, this motion graphics piece would have a strong 2D look but using 3D techniques for extra support. Besides basic 2D animation skills with imported illustration from Adobe Illustrator, cel animation techniques (frame by frame animation), 3D animation, 2D and 3D particles, 2D rendering and compositing are utilized in this project. Combining different technologies was challenging because most of them were really new to me, but this challenge also made the output much closer to what was imagined and more attractive to the audience.

Cel Animation or frame by frame animation is a traditional technique that creates animation by drawing every frame. It began from 19th century and was popular and massively used in 20th century for cartoons and animations. It is time consuming and requires good sense of speed and space but it provides high flexibility, compared to tween animation. In Equipoise, it was used for special effects, transitions and objects in After Effects to create three dimensional looks (Fig. 17).
Both 2D particles and 3D particles are used in this motion graphics piece. At the intro part of the animation, CC Particle World effect from Adobe After Effects was applied to the glow and halo around the characters when it exploded and scattered (Fig. 18). The initial setting of this effect had a different look from what was expected and there were many parameters to be adjusted such as its longevity, shape, size variation, speed, and gravity. After the parameter settings are finished, there was another issue with the round particles. The issue was the preset options did not offer a solid shape without gradient to match the flat visual style. To solve this, another solid layer was used as the track matte of the particles. By turning on the alpha mode, the area with gradient would turn to solid and enabled each particle to have a hard edge. Furthermore, the Roughen Edges effect was applied to the final particle compositions for adding stickiness and lumpy texture to the particles.

**Figure 18**
The parameter settings and the look of particles in the final render.
To achieve 2D fire effect, unlike water and liquid elements that were created with cel animation technique, 3D particles were used instead in Maxon Cinema 4D to achieve more flexibility. The key was using the Generator Modeling Tool Metaball with an emitter. Metaball enabled adjacent objects within an effective distance to merge together and created a smooth, organic connection in between. By applying this and a smoothing deformer to an emitter that constantly generated spherical particles, a vibrational fire animation was completed. Varied looks of fire could be generated by tweaking the parameters.

**Design Process**

**3D Particles**

To achieve 2D fire effect, unlike water and liquid elements that were created with cel animation technique, 3D particles were used instead in Maxon Cinema 4D to achieve more flexibility. The key was using the Generator Modeling Tool Metaball with an emitter. Metaball enabled adjacent objects within an effective distance to merge together and created a smooth, organic connection in between. By applying this and a smoothing deformer to an emitter that constantly generated spherical particles, a vibrational fire animation was completed. Varied looks of fire could be generated by tweaking the parameters.

**Design Process**

- a. Create one or multiple spheres
- b. Adding emitters to generate particles
- c. Using Metaball tool to create stickiness
- d. Using Smoothing deformer for top edges
- e. Applying 2D cartoon textures
- f. Final Render
Because of the personalization of optimism and pessimism, *Equipoise* contains a fair amount of character animation. Instead of using 3D modeling and rigging to achieve character animation, it would be better to control it in a two-dimensional environment, considering the needs and time limitation. The characters were illustrated and textured in Adobe Illustrator, then animated in After Effects.

There were several great tools for rigging in After Effects (Fig. 21):

**Duik**: A great free plug-in for rigging. With Inverse Kinematics rigging method, the animation is easy to control, but it is harder to achieve a soft, stretchy movement for the work.

**RubberHose**: A new plug-in that could create really soft and rubbery animation. However, the current version has some limitation for the animation based on its rigging method.

**Puppet Tool**: A default tool in After Effects. It creates stretchy and soft cartoonish movement that matched the visual style. It only supports Forward Kinematics rigging method so it would take more time to animate. The plug-in *PuppetTools 3* provides some advanced control based on the original puppet tool and this method would be a great support.

After the three rigging tools are compared, Puppet Tool is considered the best to create my animation and to prepare illustrated files to import. (Fig. 22)
Figure 23
Example of keyframe placements for character animation in the green lava scene, 2016.04
In motion design, music is a key element to bring artwork to another level. Instead of using narration for the work, music would be the only approach. The reason is that the work itself has enough visual messages to clearly tell the story and convey the ideas to the audience.

The music is composed by Shoghi Hayes (Fig. 24). At the early stage, a reference was made for the composer by collecting Ambient Electronic music that match the visual style and storyline (Fig. 25). Based on latest storyboards, the music would start gently and add more layers to bring up the feelings of fantasy while the plots move forward, and it would have a balanced and encouraging touch at the later part where the two forces are working together. *Tidal* by Takagi Masakatsu and *A Whim* by Serph were two main sources for the reference. Before the latest storyboard was created, other candidates such as *Courage* by The Whitest Boy Alive was once considered while the animation contained more fighting scenes. With this reference, the communication between the designer and the composer was successful while working as a team to make the original music.
According to the article *Analyzing and Evaluating Films as Works of Art*³, a questionnaire on Google Charts was designed to evaluate the project: art and design, acting, camera work, editing, sound and script. The questionnaire also included a general rating for overall experience. The respondents rated from strongly agree to strongly disagree for each question. A few questions needed to be answered by short answers. The questions are listed below.

- **Art Design**
  - The visual style is appealing and well designed.
  - Visual elements are consistent.
  - Color palette is visually appealing.
  - The characters are well designed.
  - Scenes, backgrounds and elements are well designed.
  - Special effects (water, lightning, particles, etc) are appealing.

- **Acting (Animation)**
  - The character animation are well designed and executed.
  - Secondary animation are well designed and executed.
  - The transitions are well designed and executed.

- **Camera Work**
  - Overall the camera movement are smooth and well designed.
  - The layout and composition are well designed.
  - Lighting and shading (3D) are appealing and are well designed.
  - 2D lighting (color correction and ambient lighting) are well designed.

- **Editing**
  - Overall the timing for each scene for appropriate and natural
  - Overall the scenes are consistent and continuous, no distraction by unnecessary shots.

---

Sound
The music is well designed and matches the visual.
The sound effects are effective and well designed.
The mixing is good and the level of the track sounds balanced.

Script
It is a good decision that the film has only music and generally the film is entertaining and understandable with no voice over.

Overall
The film is entertaining and engaging.
Overall the film is well designed.
The length of the film is appropriate.

Short Answers
Please describe the idea or meaning of the film (up to 3 answers).
Please describe the real identities of the characters (up to 3 answers).
If any, please choose 1 to 3 parts or scenes that you like the most.
If any, please choose 1 to 3 parts or scenes that need to be improved.
The analysis below was generated based on the feedback. Google Forms use colors to visualize the percentage to show how respondents replied to the questions (Fig. 26).

1-1 Art Design: Overall the visual style are appealing and well designed.

1-2 Art Design: Overall the visuals of the film are consistent and matches each other.

1-3 Art Design: Overall the color palette is visually appealing.
1-4 Art Design: Overall the characters are well designed.

1-5 Art Design: Overall the scenes, background and elements design are are well designed.

1-6 Art Design: Overall the special effects such as water, lightning, fire, particles are appealing.
User Testing

2-1 Acting: Overall the character animation are well designed

2-2 Acting: Overall the transitions are well designed

3-1 Camera Work: Overall the camera movement are fluid and well designed
**User Testing**

3-2 Camera Work: Overall the layout and composition are well designed

![Pie chart showing user responses to camera work layout and composition.]

3-3 Camera Work: The lighting (if you can tell it's 3D) are natural and are well designed for the film.

![Pie chart showing user responses to lighting.]

3-4 Camera Work: The lighting for 2D (color correction and ambient lighting) are well designed.

![Pie chart showing user responses to color correction and ambient lighting.]

**Data Analysis**

4 of 11
User Testing

4-1 Editing: Overall the timing for each scene for appropriate and natural

4-2 Editing: Overall the scenes are consistent and continuous, no distraction by unnecessary shots.

5-1 Sound: The music is well designed and matches the visual.
User Testing

5-2 Sound: The sound effects are effective and well designed.

5-3 Sound: The mixing is good and the level of the track sounds balanced.

6-1 Script: The decision of having only music in the film is good and it is entertaining and understandable with no voice over.
User Testing

7-1 General: The film is entertaining and engaging.

7-2 General: Overall the film is well designed.

7-3 General: The length of the film is appropriate.
According to the collected data, the general assumption of the film was related to the topics below:

- Ying/Yang
- Balance
- Teamwork
- Personalities
- Combination
- Harmony
- Equilibrium
- Personalities
- Teamwork
- Together
- Balance
- Emotion
- Comparison
- Combination
- Yin/Yang
- Combination
- Teamwork
- Inner-Balance
- Harmony
- Teamwork
- Combination
- Conscience
- Teamwork
- Balance
- Inner-Balance
- Personalities
- Happiness & Sadness
User Testing

7-5 General: For your interpretation, please choose 1 to 3 answers/words to describe what the “real identities” of the two characters are.

<table>
<thead>
<tr>
<th>Optimist and pessimist. (You and Wen?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy, Sad</td>
</tr>
<tr>
<td>Yellow: happiness Blue: Depression, but there’s a point happiness turns into mad</td>
</tr>
<tr>
<td>Yellow: happy, positive; Blue: unhappy, negative, upset</td>
</tr>
<tr>
<td>Happy vs sad, optimism vs pessimism,</td>
</tr>
<tr>
<td>anxiety vs. optimistic</td>
</tr>
<tr>
<td>rational and emotional</td>
</tr>
<tr>
<td>Positive, Negative</td>
</tr>
<tr>
<td>Red: 熱情/精力/行動派/樂觀/看到自己擁有的 Blue: 积極/平靜/精神層面/信心/看清期望/看到不足的</td>
</tr>
<tr>
<td>One is Yin the other is Yang, I guess. The yellow one seems to be more passionate, energetic, impulsive and positive while the blue seems more contemplative, zen, wise and realistic.</td>
</tr>
<tr>
<td>optimism and negativism, happiness and sadness</td>
</tr>
<tr>
<td>Positive and negative</td>
</tr>
<tr>
<td>Impulsiveness and calmness</td>
</tr>
<tr>
<td>yin and yang</td>
</tr>
<tr>
<td>Emotional symbolism</td>
</tr>
<tr>
<td>Positive Negative Energy</td>
</tr>
<tr>
<td>Ying &amp; Yang</td>
</tr>
</tbody>
</table>

According to the collected data, the general assumption of the main characters were related to:

- **Optimist & Pessimist**  **Happiness & Sadness**  **Yin & Yang**
- **Happiness & Depression**  **Positive & Negative**
- **Optimism&Pessimism**  **Yin & Yang**  **Positive & Negative**
- **Impulsiveness & Calmness**  **Optimism & Anxiety**
- **Rational & Emotional**  **Positive & Negative**  **Yin & Yang**
- **Optimism & Pessimism**  **Optimism & Negativism**
7-6 General: if any, please choose 1 to 3 parts / scenes that you like the most

- I love the section of the two characters being sewn together. I also really enjoy the section with the climbing, and the orange one falls. There are some really beautiful animation skills at work in the whole piece.
  - First scene, cup
- To me the strongest parts are after they are stitched together and the 3d scene starts.
  - The steps and ladder
- Opening hand, air plane
- Climb ladder 1:11, airplane 2:08, climb stair 2:13
- 0:41-0:45, 1:52-2:12
- In the end many guy in box 2:22, exicite ending...
  - 2:12 One drag another to climb mountain. So touch me.
  - 1:39 When two guy rush to save the world
- At 0:42, when blue is meditating and the aura surrounding him make the flowers grow. At 0:57 when the hand comes in perspective into the scene bringing the glass of water. At 2:08, when both characters are flying on the airplane and it transitions to them climbing up the stairs.
  - When the characters started to interact together
  - them working together
  - The showcase of two characters after created, co operations between characters in gaming style stages
- 1. the transitions are lovely!
- 2. I really liked the abstraction of the “glass half full/empty”
- 3. the gamified boat/ plane scene
- 4. dna helix as a ladder we all have to climb, bar by bar
- Heart/climbing ladder/after cooperation
- When both characters are in a boat and passing all the DNA bridges. And all transitions
  - Plane & Boat
### User Testing

7-7 General: If any, please choose 1 to 3 parts / scenes that you think could be improved.

<table>
<thead>
<tr>
<th>Scene</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Last shot</strong></td>
<td>I think in the second 0:47 the hand movements could be improved and at 1:51 the blue face looks odd maybe because of the perspective?</td>
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<tr>
<td><strong>Non music</strong></td>
<td>1. The 3rd shot with the sphere; 2. The boat &amp; plane shot; 3. The last shot</td>
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<tr>
<td><strong>catch fire 0:34, eyes 1:20</strong></td>
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<tr>
<td><strong>1:16-1:20. Not a big fan of the eyeballs</strong></td>
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<tr>
<td><strong>1:58 the boat hard to recognize out because all the topdown view. 2:58 ending need more clear.</strong></td>
<td>可能是目前少了一stuff 瞄準比較近 個朋友跳進去往上跳起遙遠的鏡頭，現在直接比較遠的鏡頭我們跳到一開始會不知道那顴點代表什麼</td>
</tr>
<tr>
<td><strong>0:34花花火的點託某整體風格不太搭，要的確有有點像地獄</strong></td>
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</tr>
<tr>
<td><strong>At 0:37, the animation of the fire around the yellow character bugs me a bit. At 2:00, you could add water ripples as they row. At the very end when the characters fly into the satellite, I was expecting them to interface and meet.</strong></td>
<td></td>
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<tr>
<td><strong>Could add more sounds to support character actions</strong></td>
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<tr>
<td><strong>some scenes were definitely stronger than others, but the 'others' were very strong themselves. everything balances really well and honestly, I wouldn't change anything, great work, carson! another amazing film from you! 😊</strong></td>
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<tr>
<td><strong>fire/small people at the beginning/flowers</strong></td>
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<tr>
<td><strong>fire scene</strong></td>
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</table>
The experience is priceless to my career. It is not only the biggest and longest project so far but also a significant training of determination, patience, critical thinking and responsibility. By finishing the film after so many revisions and redesign, it was a valuable process of learning the importance of preproduction and planning. I learned how to be a critical person to evaluate my own work and refine it accordingly. The process was long and frustrating. Therefore, patience and determination are very important to make myself believe that what I was doing was correct.

Also, as an animator in motion design field, it will be really normal that we have to work with music composers or other people as a team. It was a great experience of learning how to be a part of a team as a good colleague and giving unbiased, constructive feedback through teamwork and discussion.

The last important thing was that I understand more about how to be a good listener and be unbiased to critiques and evaluation. I learned how to collect different feedback from different points of view, and never ignore things that hurt you. Sometimes the most sincere feedback is the cruelest, but also the one that really makes your grow.

Beside, I also gained a lot of experiences in technical skills such as:

- Character animation
- Frame by frame animation
- Particles
- Compositing and editing
- 3D modeling and animation
- A better sense of speed control in motion design
OPPO
A motion graphics piece of optimism, pessimism and mental wellness.

VCDE Graduate Thesis
Student Gung-Kai Koo
Professor Dan DeLuna
VCDE Graduate Thesis
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OPPO – A motion graphics piece of optimism, pessimism and mental wellness.
October, 21, 2014

Rochester Institute of Technology
College of Imaging Arts and Sciences
School of Design
MFA Visual Communication Design

Chief Thesis Adviser
Daniel DeLuna, Associate Professor, School of Design
Signature Date

Associate Thesis Adviser
Chris Jackson, Graduate Director, School of Design
Signature Date

Associate Thesis Adviser
Shaun Foster, Assistant Professor, School of Design
Signature Date

MFA Thesis Candidate
Gung-Kai Koo, Graduate Student, School of Design
Signature Date
Abstract

Optimism and pessimism are the two opposite mental attitudes or points of view that establish emotions, decisions and behaviors and they affect how people interpret situations. Optimism is an attitude that reinforces positive thinking and promotes a sense of hope or better future conditions; pessimism emphasizes the hardship and evil side which anticipates undesirable or negative results. An over-pessimistic person may live miserable, while over-optimism can also lead to high risks.

To have an ideal mental wellness, a good balance is needed since both optimism and pessimism are applied to human lives. According to the journal article The Neural Basis of Optimism and Pessimism, a review of the literature on the neurophysiology, researchers have suggested that the two attitudes are associated with different cerebral hemispheres — the left hemisphere provides the positive feedback and a sense of bright hope, on the other hand the right hemisphere is providing insecure thinking and worries. The two hemispheres mediate information from opposite aspects to get to a good balance, which implies every human experience are effected by both sides of the hemispheres and the result is the status of mental balance at the moment. This concept differs from each hemisphere functions individually.

My thesis project is a motion graphics piece to explain the idea of optimism and pessimism and how they function. The two attitudes will be presented by different episodes narratively. The transitions between episodes will show their opposite but complementary positions. While the story is proceeding, the two main characters gradually notice the existence of another parallel world and in the end they finally meet each other, making friends and help each other, revealing the fact and principles of biology and psychology.

Keywords

Design
Computer Graphics Design
Motion Graphics
Psychology
Biology
Optimism
Pessimism
Mental Wellness
Mental Balance
Problem Statement

The interaction of optimism and pessimism establishes our emotions and behaviors. An over-pessimistic person interprets situation and possibility with too much sense of failure and risky, on the other hand an over-optimistic person ignores existing problems and dangers, which also makes one’s life experience insecure.

From the childhood, we’ve been taught by school and other educational materials about the importance of optimism, but the concept of pessimism was comparatively less emphasized. Nowadays scientists have already suggested an idea that the more balanced between optimism and pessimism, the better mental wellness a person has.

My thesis is a one and a half motion graphics to explain how optimism and pessimism function when one of them is dominant or they are balanced. The project is a promotion for expressing the indispensability of both optimism and pessimism, having a relatively objective aspect to teach the importance of having a balanced mental condition. This motion graphic piece will be another digital source for teenager education that shows the concept of balanced mind.

Relative questions:
• How to visualize the two attitudes and show their effects clearly?
• How to emphasize the benefits of balanced mind?
• How to control the flow and visual elements to make it worth watching?
Survey of Literature

- Handbook of short story writing, Dickson, Frank A., 1970
  The book explains how to make a short story, building a lively character, and how to create dramatic storyline. It analyzes the structures, viewpoint, plots of the story.

- Cartoon Modern: style and design in fifties animation, Amid, Amid, 2006
  A book that introduces sketchy cartoon character designs during 1950s. Most of them are simple and geometric without gradience, which is for my inspiration.

  This project shows the user the importance of education with an animated interactive film, which is connected to user’s phone. By turning the phone, the animation on the computer will change and shows two different stories with similar storyline and visual element.

- Creating Motion Graphic with After Effects, Meyer, Chris, 2010
  A very good guidebook for strong technical support with after effects from essential manipulation to advanced functions, filters and visual effects.

- Motion Graphic Design: Applied History and Aesthetics, Krasner, Jon S, 2013
  A great book that explains how to add extra values to your motion graphic work based on aesthetic and communication qualities. Besides the technical supports, this book is also explains the important ideation and inspiration and practical processes.

- Motion graphic design, fine art animation: principles and practice, Krasner, Jon S 2004, 1st American pbk. ed. The book discusses about the artistic value and esthetic of motion graphic pieces. It gives an idea of the potential and artistic power of motion graphic and guides the user to follow the concepts and principles, then start creating his own visual works.

- Japanese motion graphic creators 2013, Shouno, Yusuke, 2013
  A great book that introduces a hundred active famous Japanese motion designers and their works for research and inspiration.

- Flux: Designer Toys, Wright, Shawn, 2009
  A great book that provides a collection of designers’ toy and playthings. It is a good inspiration for character design and how to create a good characters and character stylization from different phases such as illustration, animation and cloth design.
Geo/Graphics: simple form graphics in print and motion
A great book that provides examples of geographic layout and design. It is good for inspiration with how to create balanced visual elements with simplicity and colors.

Create brilliant motion graphics in Cinema 4D, Tim Clapham
A good guidebook for learning how to create good motion graphic piece with essential and advanced Cinema 4D techniques and the combination with After Effects.

Color in motion: the challenge of color in multimedia design.
Electronic Composition & Imaging, 09/1995, Volume 9, Issue 3
This journal article is talking about how color matters in motion design. How to design the right color to highlight the scenes and movements and how we interpret color when we are looking at it. It helps designers to rethink the meaning and the role color plays, and make a better choice when they are designing colors.

A fantastic thesis project has been done last year from SVA. It is an amazing motion graphic that combines 2D and 3D techniques. The video is explaining the story of cupid in a dynamic cartoon style, which also revealing existing issues such as overpopulation, overconsumption and global warming.

The neural basis of optimism and pessimism, David Hecht, Experimental neurobiology, 09/2013, Volume 22, Issue 3
The journal analyzes how optimism and pessimism function and be controlled by different cerebral hemisphere. Also it explains the relationship between the two attitudes and mental condition such as self-esteem, risk-taking, confidence, depression and more.

Design Ideation
Mood board
Design Ideation

Personal Style
Design Ideation
Storyboard
Design Ideation
Character Design
Methodological Design

A motion graphics piece will be presented digitally to show the core concept with ambient background music and flat color visual elements. My thesis project will be mainly created in Adobe After Effects and relies on 2D animation techniques, and may include 3D techniques to create appealing transitions. The whole story will be composed by visually merging, dividing and stretching between different worlds or aspects, guiding audiences go through the story.

The color palette above will be utilized for creating the color and tone of visual element in my motion graphics piece. I choose an orange-yellow color for the tone of O, the character who stands for Optimism; an opposite blueish color for P, the character for Pessimism. The pink-orange color is going to be one of the main background color that stands for neutrality and the color of brain. The green and purple color are the secondary colors for background, environments or objects.
Methodological Design
Continued

In the motion graphics piece, the narrative story can be divided into several sections.

- **Intro**
  Introduction of the two characters, and reveals they are different and opposite.
  Amount of cut: 1

- **First Comparison**
  After Introduction, the story shows their attitudes and reactions when they meet the same situation.
  Amount of cut: 2

- **Second Comparison**
  Another story that shows their attitudes could lead to high risks or loss.
  Also in this part, the minor character will be the other side of the main character.
  Amount of cut: 2

- **First Fusion**
  The two character meet each other with a glimpse or a very foggy impression.
  Amount of cut: 2

- **First Conflict**
  The two character start contacting and fighting each other with their own traits
  Amount of cut: 2

- **Second Conflict**
  The conflict gets stronger. In this episode, the two attitudes create a huge intense.
  Amount of cut: 2

- **Second Fusion**
  The two character start understanding they can be something else than enemy, and starting accept each other.
  Amount of cut: 2

- **Ending**
  The two character become friends and help each other and create a better mental condition.
  Amount of cut: 1
### Target Audience

This project is an informational motion graphics piece for the public, thus the range of my target is relatively broad. The informational video is designed for all genders and mostly focus on 12 to 40. Occupation is not limited but educational and reading level should be higher than 8th grade so there will be no problem with understanding the content and typography. Also it is required to have basic computer and multimedia experiences.

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Occupation</th>
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<tbody>
<tr>
<td>Robin Black, 14</td>
<td>14</td>
<td>Student, 11th grade</td>
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<tr>
<td>Mandy Clarkson, 19</td>
<td>19</td>
<td>Design Student, Freshmen</td>
</tr>
<tr>
<td>David Robertson, 35</td>
<td>35</td>
<td>Director, Digital Team</td>
</tr>
</tbody>
</table>

Robin Black, 14  
Student, 11th grade  
Facing with puberty issues

Mandy Clarkson, 19  
Design Student, Freshmen  
Major in Motion Graphics

David Robertson, 35  
Director, Digital Team  
Into animation and motion

### Target Computer and Facilities

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Computer:</td>
<td>Desktop, Laptop, Mobile</td>
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<tr>
<td>Platform:</td>
<td>Windows, Macintosh, iOS, Android</td>
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<tr>
<td>OS</td>
<td>XP greater, OSX greater</td>
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<tr>
<td>Monitor PPI</td>
<td>72dpi</td>
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<tr>
<td>Resolution</td>
<td>1920x1080 HD</td>
</tr>
<tr>
<td>Accessories</td>
<td>Sound, Internet</td>
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</tbody>
</table>
Implementation and Strategies

- Format: Motion Graphics
- Duration: 90 seconds

Deliverables

- Thesis Concept
  Visual Style, Mood and Feel
  Character Design and Color Theme
  Determine prior and secondary typeface

- Narrative Storyline
  The story explains the idea of optimism and pessimism and how they function. The two attitudes will be presented by different episodes narratively. The transitions between episodes will show their opposite but complementary positions. While the story is proceeding, the two main characters gradually notice the existence of another parallel world and in the end they finally meet each other and make friends, revealing the fact and the principle of biology and psychology.

- Storyboards
  Determine cameras, transitions and scenes

- Animatic
  Refine cameras and transitions
  Animated flows
  Determine music, sounds and rhythms

- Develop Final Product
The electronic copies of my thesis document will be submitted to the RIT Archives and Digital Media Library. Beside the academic documentation, I consider submitting the projects to different associations and competitions for its exposure. Also a documentary blog is going to be launched for recording the progress and milestone. Another considerable option is a project website that introduces the video, its background and ideation.

**Design Competitions**
- Adobe Design Achievement Awards – Motion Graphics
- Bass Awards
- Vimeo Festival – Motion Graphics
- Reddot Design Awards – Film & Animation

**Related Associations**
- Mental Health America
- Mental Wellness Center
- The Mental Wellness Awareness Association
Evaluation Plan

At the final presentation a questionnaire will be provided to audience. According to the responses and the comments hopefully any feedback and suggestions will be found to determine how successful my work is and give me ideas of improvement and refinement.

Besides, a pre-completion test and critique will be implemented with a group of people from both related and unrelated fields. Collecting their critical analysis from multiple aspects is another supportive method to evaluate whether my work is effective. On the second the May 2015, IMAGINE RIT, one of the most significant event of RIT will also take place on campus, which is another great opportunity to get feedback and suggestions before the final defense.
My concern of budget and expense is mainly focused on copyright of music sources and sound tracks and sound effects.

According to the website Sounddogs, the average price of sound effects provided is 4 dollars. Besides, most of the music tracks provided by Freeplay Music are free for educational purpose while the cost of non profit promotion possibly goes up to 25 dollars per year.

For original composition, the max amount of my budget is 300 dollars. To sum up, my total expense is within 400 US dollars.
**VCDE Graduate Thesis**  
Student Gung-Kai Koo  
Professor Dan DeLuna

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
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<tr>
<td><strong>Document Project</strong></td>
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<td><strong>Literature Review</strong></td>
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<td><strong>Final Proposal</strong></td>
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<td><strong>Final Committee</strong></td>
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<td><strong>Storyboard</strong></td>
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<td><strong>Imagine RIT Prep</strong></td>
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<td><strong>Finishing Final Project</strong></td>
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<td><strong>Defense</strong></td>
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<td><strong>Animatic</strong></td>
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<td><strong>Final Production</strong></td>
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<td><strong>Test and Feedback</strong></td>
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<td><strong>Refinement and extra</strong></td>
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End of Fall 2014  
Start of Spring 2015  
Thesis Defense
VCDG Graduate Thesis
Student Gung-Kai Koo
Professor Dan DeLuna

Bibliography


Bibliography


• Krasner, Jon S. Motion graphic design: applied history and aesthetics. Amsterdam: Focal Press, 2008.

