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Unit

By

Shuang Chang

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FOR THE DEGREE OF
MASTER OF FINE ARTS
IMAGING ARTS/ ANIMATION
SCHOOL OF FILM AND ANIMATION
COLLEGE OF IMAGING ARTS AND SCIENCES
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ROCHESTER, NEW YORK
February 19, 2013

Stephanie Maxwell,
Professor, Animation Program Chair
School of Film and Animation
Rochester Institute of Technology

February 19, 2013

Tom Gasek,
Assistant Professor, MFA Program Director
School of Film and Animation
Rochester Institute of Technology

February 19, 2013

Abstract

It is a basic concept in Taoism that “personal infinity” can be achieved by visualizing the process where human bodies unify with the Universe through Taoism study and practice. This project, *Unit* is an animated adaptation of drawings created by my mother, Mrs. Hanjinying, who is writing and painting for a textbook on Taoism. It is a visualized journey of a Taoism experience featuring two characters who are different manifestations of the same self that unite and connect to nature and the Universe through their spiritual development. The animation is four minutes in length. The imagery consists of 2D based characters composited with surreal environments and effects. The characters were hand drawn and colored digitally. The elements in the environment, such as smoke and bubbles, were generated as 3D elements using After Effects. The prerecorded music soundtrack was edited in Soundbooth. My creative intent was to visualize a concept based on existing arts and documents and animate it without narration. The production process progressively emphasized idea refinement and simplification. The challenge was to create an atmosphere of a Taoist space. Finally, *Unit* was created to honor my Mother with a revision of her interpretation on life, the Universe and Taoism. Unit has been donated to the Art Museum of Taoism in Beijing, China as a display video within the museum.

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Introduction

The Inspirational Painter



Figure 1. Mrs. Han and her painting

Mrs. Jinying, Han (1961-) grew up in a typical family of China in 1960s in the period of Cultural Revolution when Materialism and Marxism dominated the mainstream of ideology. Surprisingly, Mrs. Han was hardly influenced by her Proletariat, working class family. Instead, she pursued her beliefs through her individual experience. Not like most people of the late Cultural Revolution generation, who were extremely conservative when claiming their beliefs and thoughts, she needed to follow the true feeling that touched her and she was brave enough to proclaim it, regardless of any doctrine.

She started her spiritual voyage when she began her first job as a researcher and journalist on ethnic folk customs. She traveled to “Deep China”, a remote mountainous area in the southwest, where she visited tribes and learned the ancient culture, including meeting with masters of Buddhism, Qigong (an exercise of Tai Chi), Taoism, and other spiritual branches. Meanwhile she also became involved in certain spiritual practices herself. She states that she intuitively connected to something that touched her physically and mentally, but she was not sure what it was at that time. Years later when she became a writer-editor, whose books were mostly about traditional culture, she finally had a profound realization when she researched Laozi and his writing on *Tao Te Chin*. Taoism would change her life.

Similar to the study of the Bible, there are many schools that approach the study of Taoism differently. For instance, there is literature interpretations, moral readings, philosophical analyses, religious conceptions, etc. Mrs. Han was interested in the physical practice of *Tao Te Chin*. Compared with the typical way of study, by digging into some trivia, analyzing with as many factors as possible, and trying to imagine the intentions of different personalities and experiences, physical study is very rough and bold. But, Taoism practice is more like yoga, it focuses on meditating and breathing while leading the breathe through one's body in order to achieve personal eternity. It is a physical experience.

Based on ancient Chinese medicine, which is widely applied to the method of massage, there are hundreds of acupuncture points located on the human body, and people who practice Taoism interpret *Tao Te Chin* as a metaphorical instruction on how to lead the breath. According to modern science, a child is initially a fertilized egg. Similar to the theory of Taoism practice, a fertilized cell is like a breath, then it divides into two, one forms a heart, the other becomes the liver. As one is growing up, the two most important organs of human body are separated further and further apart, while cells keep on splitting into more cells, the initial breath as one's total energy becomes less and less until the end of life. The physical practice of Taoism is, simply saying, to recall the breath, or, the inner power that connects the whole body as it travels through, and then reunites as the original cell. Then, one will rejuvenate. Also, during this process, some scenes or visions will spontaneously occur in the practitioner's mind or senses. Some are subtle and ambiguous. Some are vivid, spectacular and surreal. And some bring warmth, smells or other sensations.

After practicing Taoism for a period of time, Mrs. Han was amazed by the energy and inspiration that came to her, and she was so enthusiastic that she could not help sharing her experiences with others. She began writing a blog, noting down what she saw and felt. But soon, the vague scenes became detailed and complicated and she found words were not enough. There are never enough adjectives to depict our crucial and unique moments as human beings. So, Ms. Han decided to visually represent them. Without taking any painting classes or

doing fundamental studies as would be expected in any discipline, she finished about twenty oil paintings and held a first exhibition after two months. She was never worried about completing any of her paintings, as she said, the breath lead her brush. She was painting subconsciously, like daydreaming as the ancient Taoism masters transcended into her and her paintings. It was the best way of meditation for her.

Now several years later, not only does she own a studio, she also has hundreds of students who are learning Taoism meditation with her, and thousands of blog fans who are reading her articles. As a witness of her development and also as her daughter, I was amazed by her imagination, creativity and inner power. And, as also an audience to her art works, I felt awe when standing in front of her paintings as if I were also entering a temple and being watched by the ancient masters. In addition, as an artist myself, I was searching for my own path to the Infinity, and it might be my fate to follow the road my mother began and develop the Universe through my own vision. To show my adoration and gratitude, I created my thesis animation, *Unit*, as a visualization of a journey of Taoism.

The Art Museum of Taoism



Figure 2. The Art Museum of Taoism

The Art Museum of Taoism is the studio of Mrs. Han, and also the classroom where she holds lectures for small groups. It is a temple in the city, and acts as a bridge that connects them with the masters. Looking at the paintings of Ms. Han, visitors react to the messages those drawings bring. Some of them even inspire new artistic expressions, such as when a traveling monk from Thailand began singing as he entered the Museum.

In such an historical city as Beijing, there are many temples have good reputations. However, people visit the Art Museum of Taoism for a different experience. Instead of *putting a uniform* onto everyone, meaning teaching the same thing to all the students, Mrs. Han emphasizes individual process and spontaneous reaction. The Museum provides an open atmosphere that is not antiseptic or conservative like other institutions. There are no rules for learning or a textbook to follow. All Mrs. Han does is to explain her understanding and experience of the core of life.

It sounds very conceptual, but students still feel the achievement. They believe that they bring their soul (the inner core) to her classes, even though they do not gain concrete knowledge like students in a traditional way. Their souls receive the messages from the transcendent masters, and they feel physically healthy, energetic, younger, and mentally peaceful with a positive attitude toward life. Mrs. Han says that the goal of her courses is to help students achieve the connection process independently.

I always understood that spiritual satisfaction is important to humans. But, I still questioned this general need to resort to spiritual truths to explain life's mysteries. Why would people spend their money on abstract ideas or beliefs? If they are suffering in life, why not use this money and their time to cure their pain or find pleasure? And how could they pursue individual success by listening to a general lecture? In such a materialistic society, what makes people believe that an abstract thing can heal their grief and lead their spirit? With these questions, I started my project.

Preproduction

Concept Design

After deciding to make an animation about the physical practice of Taoism, I actually only had a topic and not a concept. There were many possibilities and

choices I could pursue. Such as, a character animation of Tai Chi training, like Kung Fu, or an educational video with a narration of *Tao Te Chin*. But none of them were really compelling to me. Until I found an old document.

In *Journey to the West*, one of the four classic novels of Chinese literature, a monk and his three protectors travelled to the western region of India to obtain the sacred texts of Buddhism. Similarly, there are plenty of secret books of Taoism too, which usually are notes by the ancient Taoism masters. Most of these books have not been published yet, and they are not considered book literature. In China it means that they are not forbidden. And, there is hardly a press that would take the risk of publishing them. Since only a few people are able to read these documents in their native language, they do not draw the attention of the Chinese government that judges religious groups as national enemies.

There are three kinds of fates for these books. They might have been destroyed during the Cultural Revolution. They might have been recruited into national religious institutions and are no longer accessible to the public. And, a few survive hidden by people in remote areas that are less influenced by the Revolution. As time goes by, new generations might not even notice these books on their bookshelves.

I was so fortunate to be able to access one of these documents. It depicts the vision of the writer when he practices Taoism. It was written in such a detailed and abstract language that, at first, I could not follow the ideas and direction when I first attempted to read it. Somehow, after I put it aside, I began visualizing some scenes in my head that were directly inspired by this document. Some of them were similar to Ms. Han's paintings; while others were influenced by distinct art works in my memory. I realized that at this moment my Taoism practice had begun.

Scriptwriting

Taoists believe that everything happens for a reason: It is a result of something that happened before that will cause something to happen in the future. And the Taoists' wisdoms of foreknowledge are based on their sensitivities where they are able to connect a current event to something in the future. They are more prepared and calm on sudden issues. When something urgent happens, they are able to analyze and investigate the reason by traceability. They are usually at ease and not afraid to solve problems. The process of forming one's mind is so smooth that one is not consciously paying attention to this process or slowing down the pace of life for introspection. In short, Taoism study trains peoples' intuition subtly and gradually.

When I started visualizing scenes while meditating, my first reaction was to wonder about the possibilities for incorporating these scenes into my film. And when I was narrowing down a script, I did not add or arrange anything other than the descriptions from the ancient document that I had found. It was difficult to form a story, and there was no imperative action. The characters in the film would breathe and meditate, and the environments would reflect what the characters feel.

My focus was on the interaction between the characters and their environments. As the characters entered into each step of Taoism practice, the backgrounds would change accordingly. The film is a journey where one unites one's self with an inner power and connects to nature and the Universe through spiritual development and Taoist practice.

However, for most of the audiences who did not have Taoism experience, it would be difficult to understand. There needed to be some kind of guide in order to enter and journey the universe. So, I divided the animation into three parts: A guide leading the audience into the universe, the view inside the universe, and the return to the real world.

Unit Script

The visual design of *Unit* was inspired by one of Mrs. Han's most popular paintings, *The Conch Shell* (Figure 3).

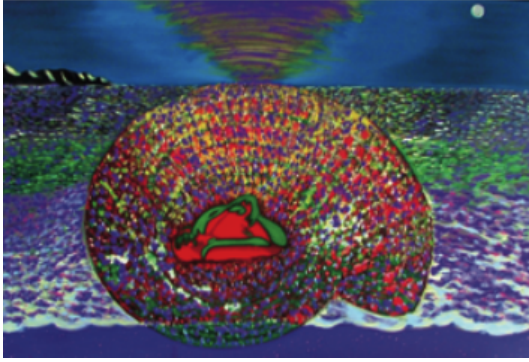


Figure 3. The Conch Shell by Jinying Han

The shell symbolizes Tao Te Chin, or generally the method of Taoism practice. A girl picks it up the shell from the beach and places it to her ear and listens. She learns the path to the Universe of Taoism.



Figure 4 and 5. The shell and the opening scene in *Unit*.

There are a woman (Figure 6) and a child (Figure 7) meditating in the Universe. The child is located in the position of the uterus in the woman's body. They are connected by colorful and glittering strands. The child represents the inner power of a person, which is incredibly more powerful and capable than one's self.



Figure 6 and 7. A woman and a child, meditating in the Universe

She departs from the woman's belly, and moves upwards. As she travels, the woman's body changes its color to a gradient of white, red, blue, golden and green that correspond to the five human organs.

After the child reaches to the position of the throat, she starts floating back down to the woman's belly, which means an inner power has travelled through one's acupuncture points. It means that the inner power becomes stronger.

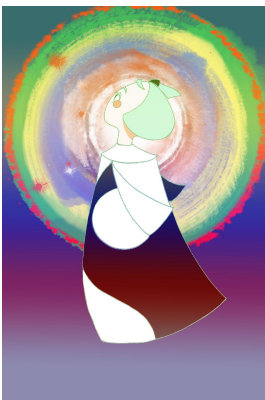


Figure 8. The child moved upwards.

There is a triangle that appears from her body, and then three dragons become visible and twist up from the three angle points. They intertwine and then break into shining raindrops that fall down onto the child.

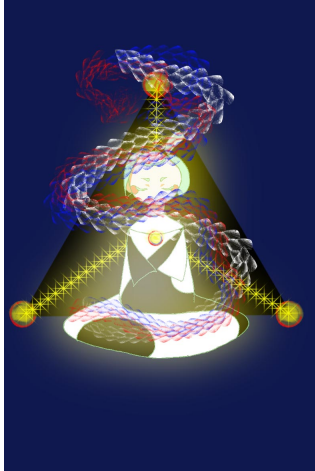


Figure 9. A triangle that appears from her body, and then three dragons become visible and twist up from the three angle points

As it rains, flowers grow from the girl's body. At the same time, there are also flowers growing from the woman's body, which means the smell of the person has changed.



Figure 10. Flowers grow out the child's body.

Now the child is powerful enough to stand up, and she does not depend on the physical body, which is trapped by aging, illness, death and pain. She is released as a pure, happy, and innocent spirit. The woman is also changing at the same time. Her breasts become a sun and a moon, and the rest of her body merges into the ground that the girl creates. As the sun and the moon rise, it starts raining. The child lifts her head upwards to drink the rainwater, signifying the breast milk from the woman. Thus, they are unified.

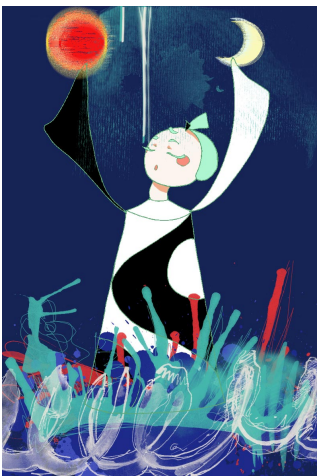


Figure 11. The child lifts her head upwards to drink the rainwater.

The girl continues her journey while meditating. She is sitting in the center of a field. The rain turns red, the wind is white, the thunder is blue, the lightening is golden, and her spirit core is green, and these correspond to the five human internal organs.

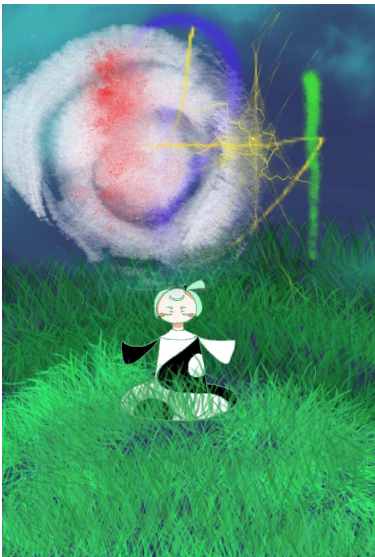


Figure 12. The child sits in the center of a field.

Now, the power of the child starts to influence the environment. Nine pillars rise up out of the ground and converge into a shining sphere that then develops into the shining spine of the child. Meanwhile, power also travels through the child's body, lighting up her five internal organs in their corresponding colors, as if the Patron Saints of these organs have all been woken up: A purple dragon for the kidney, a red tiger for the heart, a white turtle for the lung, a blue frog spleen, and a golden horse for the liver. At the same time, the little child's appearance grows into to a combination of the woman (the physical body) and herself, and these signify that the final unification has been completed.



Figure 12 and 13. The child and the five Patron Saints

The film returns to the girl on the beach still listening to the conch sounds. She has a peaceful smile, which is similar to the smile of the child during the transformation scene previously, as if she experiences the process of Taoism practice within her. This is the end of the journey.

Character Design

There are three characters: the girl on the beach, the woman in the Universe and the child. Because they will be unified in the end, they are designed to be similar and related at the same time. The difficulty for me was to determine what would be different and what would be similar between the three.

The most different features of the three are in their identifications: The girl on the beach is a real person, the woman is her physical body in the Taoism Universe, and the little child is her spirit. While their similarities are a lot more ambiguous,

they are really the same entity. So, I made their appearances different but their facial expressions similar.

The girl on the beach functions as a guide, who brings the audience from a real world to an abstract Universe, and she is the human form. She has a full human body shape, and she moves like a real person. She represents anyone who practices Taoism, not someone specific, so I wanted her image to be less more generalized. I used scramble lines to show an outline of a girl and her face is not revealed until the close-up of her listening to the shell.

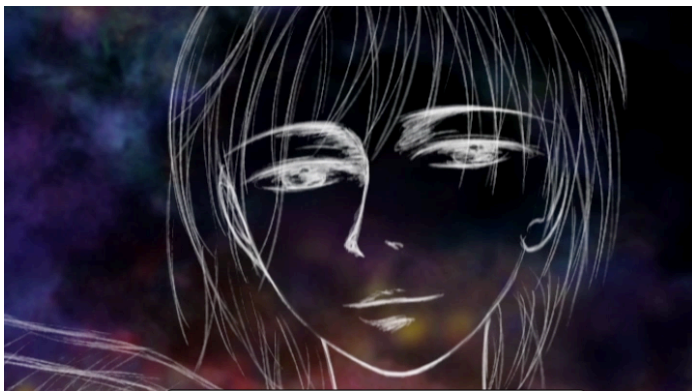


Figure 14. A close up- shot of the girl

The woman is also an outline but with a clear face. The abstract line is meant to detach her from the real world and allows her to enter into the conceptual Taoism Universe, on the one hand. On the other hand, considering the influence from the child, she does not have the real power, only nothingness. By releasing the child, she vanishes and fulfills herself in the entire Universe. Her face looks like a

Buddha, or someone who sees beyond.



Figure 15. A woman and a child, meditating in the Universe

The child is the energy of this film. She was adapted from a character in a series of Mrs. Han's paintings, and I used a Tai Chi pattern for her robe to indicate Taoism. She is also ingenious and omniscient, and free from human traditions or social regulations. She does not bear any responsibility to make others happy, only herself. For these reasons, I did not limit her with a human shape, and she moves like a light spot swimming and swinging. Her face looks calm and neutral, because any facial expression would humanize her.

Environment Design

There are three major scenes: A beach at the beginning, a Taoist space where the child and the woman interact with each other, and a field where the child amplifies her power. They were all omni-dimensional, vast and mysterious, and other than locating the characters, they all have symbolic meanings.

The seashore where the shell is picked up indicates the origin of humankind. There are colorful waves underneath the surface of the sea, which breeds the shells. Also the color of the waves looks like sparkling fire, and fire underwater is the one sign of the Eight Trigrams of Taoism, meaning it fosters power. The space is a dark, unearthly and isolated location, which represents freedom and independence. The field appears after the woman vanishes, and it is sowed by her body and irrigated by her breast milk, which signifies the growth of her energy. She becomes comparable to the child as they unify as one.

Storyboard and Animatic

The animatic is the tool I used to visualize *Unit*. The animation script was a flow of thoughts and feelings, and there were not many cuts, which made it difficult to control the pacing. The actions of the characters and the interaction between them were subtle, so it was essential to make sure that they were at the right locations in the frame, so that their contact could be seen. Additionally, the backgrounds were omni-dimensional, and I used many zoom ins and outs in sequences in order to enhance a feeling of infinity (it was easy to be disoriented). Overall, to save time and avoid over animating, a well-timed animatic was essential for this work.

The storyboard was based on the concept drawings and visual designs. It helped me to determine a character's angles and motions, the layouts of the

backgrounds, and the camera movements. Also, it broke down the animation into sequences and shots, which was very beneficial to me in organizing files for production. Additionally, I often got new ideas while I was drawing, so it was a practical way to refine my overall idea and it was also a kind of 'warm up' before production.

The animatic was the playable version of the storyboard, and it included the sound. It gave me a better vision of the length of shots, transitions between scenes, the levels of detail, and the amount of drawing that was needed. It was more of a production tool than a creative one. After laying out the storyboard in After Effects, I was able to visualize the animation and make production plans.

Sound and Music

In the summer of 2010, a traveling minstrel came to visit The Art Museum of Taoism. He was a monk from Thailand traveling around temples in East Asia for chanting and sermons. He met Ms. Han in her Museum and started singing spontaneously when she introduced him to a series of her paintings. He seized upon the messages and power from the paintings, which inspired him, and transferred their energy into his own performance. He sang in onomatopoeia, expressing his sentiments by pure voice. Even though he did not attend any of Ms. Han's lectures, he received the knowledge.

As soon as I heard the recording of this chanting from Ms. Han, I decided to use this in my animation. It was a perfect match. The voice was calm, pure, sonorous and mellow, which created an infinite atmosphere, and great energy was born from it. And it had no instruments, no beats, or any conventional musical structure and accompaniments, which was unique. Also, it brought a dynamic to the animation and created its pace and rhythm. I roughly cut the music to match with the animation, and it set the tone of the whole animation.

Production Process

The animation was divided into two parts: The beginning and ending scenes that were in the real world, and the main scene in the Taoist Universe. The visual styles and pace of motions in the two parts were different, so the processes of production were separated, using different methods.

Beginning and Ending Scenes

A girl picks up a conch shell on the beach, and listens to the sounds within the shell. Around the girl is a sea with strong waves, a sky with moving clouds, and she is a person walking. Comparing this scene to the rest of the animation, these it has slightly realistic and natural atmosphere. The repetition of breaking sea waves under a hazy moon was a great way to calm the audience down, and the entrance of the walking girl into the scene would be very attention grabbing and

move the work to the next level. However, if the views were too real, it might not be enticing enough, and the audience might lose interest before the girl shows up on the beach. The balance between realistic and surrealistic elements was my main focus for this part of the production. In addition, I intended to visually reference Ms. Han's paintings at the beginning, so an oil painting rendering style was a desirable choice, and would also add a sense of romance and mystery.

References

In the past, my study focused on surrealistic animation, and I usually did not use references unless for character animations. The backgrounds were all imaginary with exaggerated lighting and colors, which created an obscure impression for the audience. Even though I was not against using references, it was just not the desired direction of my style. I was afraid that the details in the reference would distract me from my own creation, and depending on an existing image would limit my imagination.

At this time, I was still trying to hold on to my style, but I also had to subtly guide people into a strange world. Instead of letting them see a character in the scene, I wanted them to feel that they were in the scene too. So I was stuck for a while, because my drawings in my imagination worked fine, but they looked odd on a computer screen. To have a better vision of the sea, I went to some beach areas in Rochester and shot a reference video there.

To my surprise, when I held up a camera in front of my eyes, I began to see the differences between the actual sea and my drawings. The frequency of waves, the tide fluctuations, the rise and fall of each wave in their own patterns, all coincided with each other in nature. But in my drawings, they looked like they were combined from different oceans. I also took videos of a girl walking along the beach, finding and picking up a shell from her first perspective, (in order to get a sense of the proportion of the girl relative to the sea), and her feet and the sandy beach. These shots were important to create the sense of reality in these scenes.

Rotoscoping

After trying to match my drawings with the reference video, I realized it might add too much work to draw each single tide and a wave sequence and then composited them together with a camera movement. Also, to achieve an oil-painting effect, adding a filter looked odd and artificial. So I came up with an idea: Why not use the digital oil-painting style to rotoscope the sequence? It would maintain the painting features, while keeping the image natural and real, and it would be an affordable amount of work.

The difficulty was that the opening scene was calm and peaceful. The jumpiness and shakiness between frames, which is the nature of rotoscoping, might break

the quiet atmosphere. To avoid this, I separately traced the highlights and the shadows of the waves in two sequences, and composited them overlapping with each other as a solid painting layer. Adding some subtle transitions and effects, such as fade ins and outs and multiply, I was finally satisfied with the background. The character was also animated frame by frame to integrate with the background.

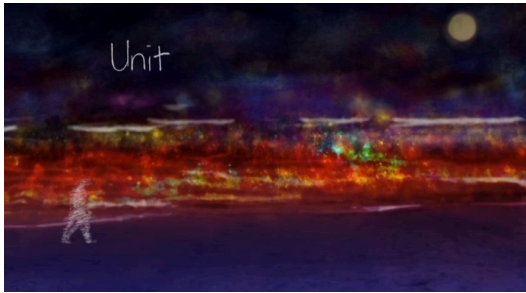


Figure 16. The opening shot of *Unit*

Compositing

Having finished the realistic part of the film, I was going to add the surreal part: One of the eight trigrams of Taoism, fire underneath water. According to the original design, the sea is not a natural sea in the real world. There are shining sparks underneath the sea surface, and they were vivid and breed power. How to give the colors the sense of power was a problem for me. After some experimentation, I found a process using to After Effects by adding a video layer or an image sequence onto a layer of colorful patterns to give the colors a vibrancy and the sense of power.

What kind of videos could bring power? One option was to add a layer of sparks under the water layer, but the shape of the flames and the movement direction was vertical, and sea was horizontal. If they were combined, the frame would look busy. So with a layer of swirl, even as they were rotated to match the figure of the sea, the motion were still staggered, making a vague intersection in the frame.

Another option was a layer of floating clouds, but the change of the color needed to be animated separately. Similarly, a video of rain would not work, because the colors on the raindrops were too thin to be seen. My last choice was a sequence of snowflakes. The flakes were clear enough to be seen, and they varied in shape, so the colors would ‘spark’ when the flakes went through. It also had a smooth movement that would not interrupt the motion of the sea. After spending two nights in front of a computer, I finally completed a scene that was shining but dark, powerful but peaceful and vivid but quiet.

Main Scene

The main part of *Unit* is the journey of Taoism. As the beginning and ending scenes were to set up the tone for this animation, the main scene was to deliver the message and arouse the inner power of the audience, functioning like Mrs. Han’ paintings and lectures that lead practitioners to unify themselves with the energy of the Universe.

The main scene takes place in a dark Universe, but the characters are bright, and their movements are smooth. It was the most essential part of the film, while for the audience, it is the most difficult to follow. Unlike the romantic and mysterious beginning of this film, which brought the audience a sense of déjà vu, as well evoked their interests, I wanted to mostly be persuasive and make the main scene clear and precise, so I used a more traditional animation approach for this part of the production.

Character Animation

The two characters, the child and the woman, both had abstract figures, subtle expressions and delicate movements, so I chose hand drawing with pencil and paper for fine lines and smooth animation. In the past, I used to directly draw on the computer to save time, but this time I thought it would be a great opportunity to try something more traditional since the production schedule was not so tight.

I started from some simple pencil tests, and then separated some elements onto different layers, such as the braid on the girl's head, and then I added key frames, cleaned up the art work, put in the in-betweens, scanned everything into a computer and colored each frame, and lastly, the movie clips were edited. The whole process took longer than drawing directly in software, like Photoshop, but the quality of the results was much better. The lines were better defined so the

in-betweens were more accurate, the movements of the characters were more delicate, and a little bit of secondary motion (for example, with the hair and robe of the girl) created a of smart and fuller look, which matched perfectly with their characters.

The child did not have legs, and her actions were non-human. It was my intention to differentiate her from actual people, because she represents the inner power of mankind, and she is not subject to the limitations of human beings. For example, people need to keep balance when walking, moving their left leg and right arm, or right leg and left arm at the same time. These are restrictions that people are used to and they don't really notice them. But the child was absolutely free. In one shot, she flies like a bird towards the camera, and in another shot, she swims like a fish along the spine of the woman. Most of the time she breathes and meditates with her eyes open and close. This reflects the idea that she does not need to take actions to influence the environment, and that her power would evoke itself.

Elements, Symbols and Effects

Even though the characters did not engage in much action, there are plenty of Taoism elements and phenomena that get revealed. Some of them are unfamiliar or even misleading to other cultures or religions. For instance, three dragons in three colors rise up from each angle of a triangle, which appears inside of the

child, and flowers grow out her body. Contrasted to the child, those elements were designed in a particular graphic style, and animated by computer. One reason for doing it this way was to harmonize with the child, who was wearing a Taoist symbol as her dress. The second reason was to highlight the child. Compared to frame-by-frame animation, 2D computer animation draws less attention to itself and is easier to manipulate, so the audience can focus more on the characters even if they are not engaged in a lot of actions. The third reason is my personal preference: I was always interested in graphic design, and I wanted to try animating designs. This is different from traditional hand drawing animation, which emphasizes movements and dynamics. Computer animation stresses levels (layout) and transitions. This requires detailed designs before production, the ability to pre-visualize the animation, and the flexibility to be able to make adjustments if anything does not work. This was a beneficial experience for me to actually be able to develop skills that are not used in frame-by-frame animation.

Transition

The last step in production was to combine the beginning and the ending scenes with the main scene. In the script, it was the process that the girl introduces on the beach that guides the audience into the world inside of the shell. In another words, it is the path from the earthly world to the Taoist Universe. This is also the pursuit of Taoist practitioners. In the film, this transition takes place when the

close up of the shell changes to a full view of the woman meditating in the Universe.

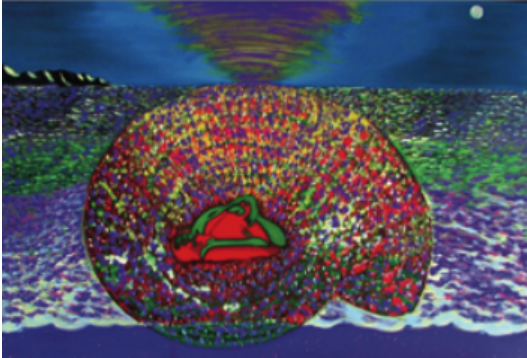


Figure 17. The Conch Shell by Jinying Han

In the drawing of Ms. Han, within the conch shell there is a shape of a woman lying at the center of the shell. Imagining her sitting up, she would have the same figure as the woman in the Universe. So I took this idea and added a sequence of her sitting up, then rotating ninety degrees to face forward as if she is taking over the scene, and then her face fades in with her eyes closed to show that she was meditating.

It was a successful attempt. The transformation from the center of the shell into a female outline and the rotation of the woman seemed compelling enough to keep the audience's interest, and there was also an adequate amount of action to dominate the frame, and the motion was even and smooth to keep the transition between the scenes.

There were also some small transitions between shots in the journey scenes. Such as when the girl moves out of the frame, the camera focus shifts to the

elements in the frame. This was done to prevent any distraction by complicated camera movements. At these moments, some slight transitions that indicate the relative positions between the characters and elements were necessary to help the audience to locate the frame.

There were two considerations to create these transitions. One was the accuracy of the frame to make sure that the proportion between the characters and the environment was correct, the lighting and shadows were constant, and the if distance between the camera and the image changes the width of lines must also reflect these changes. The other consideration was to imitate human sight by adding some slight camera movements to indicate the direction of the character's movement, or the relative location of the next frame. For example, in the close up shot where the woman opens her eyes, I moved the camera down a little bit. And in the next shot, the child looks up as the camera is still moving downwards until it stops. This camera movement between the two shots implies that the woman is above the child. It was also an economical way of making the shots coherent in their transition from one to the other.

Postproduction

In the animation industry, I believe that the level of postproduction distinguishes the quality of the final work. But it is often overlooked in many students' works due to running out of time on the production and also due to lack of funding. Also,

after watching the same footage thousands of times, once can become so familiar with their work that it becomes difficult to remain objective with fresh eyes and a clear mind. Even new ideas and making changes might be pushed aside because it can complicate the work in its final stages. For many students, postproduction is a process where mistakes can be corrected and new ideas can inspire changes in the work, but many do not make corrections or realize their new ideas.

There are plenty of things in postproduction that can be done by one person. An animation is not complete without postproduction. So I took a break from working in postproduction and did some meditation, read Ms. Han's books, and watched others' works. This was an restorative time for me and allowed me to physically reset myself to a calm and healthy condition. Mentally, I had a better understanding of the images I saw when meditating. And technically, I learned some skills in After Effects. So when I opened the files again, the tedious feeling and fear for changes had gone. And, I enjoyed a prosperous postproduction period.

There were not many mistakes in the script and design, since *Unit* was not narrative or depending on actions. But there were some flaws and lack of completion in the animation that needed to be adjusted.

Timing

Timing was mostly done by Time Remapping in After Effects. I also used duplicating and deleting frames to match the image with the pre-edited soundtrack, which is the recording of the song by a traveling minstrel.

Unlike narrative animations, the timing of *Unit* was not based on a story, but on the imagery. It begins with a peaceful scene and then leads into the Taoist Universe. Gradually the pace picks up until the characters are unified with each other and the environment changes to a vast field, which is the high point of the animation. As the image of the Universe fades away back onto the beach with the girl listening to the shell, the animation becomes slow again. The process through this film is similar to the ebb and flow of the ocean itself.

Besides the general rhythm of the film, I also adjusted the length of some shots. Some of the shots could be modified by duplicating frames, but some were not that simple. For example, the original sequences of drawings might not have been long enough to produce a slow pan, like the beginning of the field scene that was too short and made the field looked small. The camera was always moving, so it was hard to pick up and duplicate frames. I ended up expanding the

original drawing and re-editing the whole shot.



Figure 18. The field scene

Compositing shots and Editing

The compositing and editing were both done in After Effects. One of the difficulties was to create the depth of the environment, because all the backgrounds were omni-dimensional and the characters and elements were flat. In order to establish a three-dimensional stage, first I inserted a couple of layers of colored patterns in the background, and animated the transparencies to imitate planets in the Universe. Also, I adjusted the sizes and lights of some elements, and applied 3D camera techniques, which provided a depth of field automatically. Another problem was to define the weight and strengths of the characters. By adding shadows and reflections, the characters looked less floating. I also used pins to distort their body while they were moving, which exaggerated the force of the movements.

Sound Enhancement

The monk-chanting soundtrack was cleaned and edited in Adobe Soundbooth and Pro Tools. To enhance an acoustic feeling of the Universe, I added a subtle echo, which also expanded the perception of the spatial qualities of the Universe. And there were also some scenes in the film where natural sounds were used, especially during the highlight moment of the film when the woman merges into nature and the child summons the wind and rain. I applied some nature sound effects, such as thunder and lightening, to create a full image and sound atmosphere and exaggerate the power of the child.



Figure 19. The rain scene

Color Correction

I did the color correction based on my personal aesthetic and style. The original designs of *Unit* were influenced by paintings of Ms. Han, so the elements of the animation were extremely vivid in color. But on the screen, they needed to be visually balanced and coordinated, as well as consistent across different shots. At the same time, they need to contrast with the characters. I used Color Correction, and Levels and Curves, in After Effects to adjust the color. Besides keeping the color and light balanced, I also added some filters on the entire

animation, not only to achieve the visual harmony between each shots, also to build a sense of integrity. Additionally, I applied some effects to shift the camera angles, such as lens blur, to give depth of seeing perspectives.

Title and Credits

The title of the film and the credits were hand drawn to match the oil painting style in the beginning scene.



Figure 20. Credit

Conclusion

Unit was not my first independent animation, but it was the first time I chose a concept that I was not so familiar with. I was very fortunate to take the approach I did on this work, and to be able to digest it. It changed my way of thinking by training my intuition. And I became very confident, as I more and more believed that my inner self is more powerful than I am, and if I am listening to her, I will make the right decisions. I also met a lot of people while doing Taoism research. Most of them were visitors to The Art Museum of Taoism. Some of them had fears and pain and were seeking help. And I witnessed how a spiritual mentor

changed their way of thinking and shared with them a practical method for release. This unique experience confirmed in me the beauty of human nature, and I saw the possibilities of being and felt the power of life.

Creating *Unit* was an amazing experience. Not only to grow to understand Taoism better, but also to enhance and practice a variety of skills in animation production. As I mentioned above, I approached this work with many possibilities and techniques for its creation, and it gave me a wide view onto the making of an animated production, from preproduction through the end of postproduction. It also was an important opportunity to put my knowledge of animation production into practice, challenging my potential for creativity and imagination, and enlarging my personal resources and references.

Unit
By Shuang Chang

Graduate Thesis Production Proposal
April 2010

Approved for Submission By

Chair, Stephanie Maxwell

Thesis Committee :
Tom Gasek
Robert Deaver

Title: ***Unit***

Animator: Shuang Chang

Techniques: 2d and 3D computer animation

Length: 4 minutes

Date: April 2010

Advisor: Professor Stephanie Maxwell

Synopsis

It is a basic concept in Taoism that “personal infinity” can be achieved by visualizing the process where human bodies unify with the Universe through Taoism study and practice. This work will be an animated adaptation of drawings created by my Mother, Hanjinying, who is writing and painting for a textbook on Taoism. It will feature two characters who are different manifestations of the same self that unite and connect to society, nature and the Universe through their spiritual development through their Taoist practice.

The Story

The Universe is dark. There are stars and streaks of light that pass through the darkness. In the middle of this Universe there is a Little Girl who is swaying while sitting on a swinging leaf-like surface. She has two dark braids that hang down and move with her swinging. She has a book in her hands, which begins to open and she holds it up and the book floats upwards away from her. There is a silvery radiance that emanates from the book.

In the book is a living modern city with an intersection between two noisy avenues. The traffic lights change and a rush of people and cars takes place. Suddenly the rush becomes slow motion and rays of colorful abstract shapes begin to come out of the backs of the people. In the windows of the surrounding tall buildings there are different environments, like offices, a restaurant, a gym, and so on, and the people in these places are very absorbed in their tasks and the colorful abstractions are also coming out of their backs.

Down in the intersection, the normal motion and activities resume and the colorful abstractions suddenly disappear inside the people again.

The Little Girl is now standing in the center of the intersection meditating. Her hands are folded in front of her in a praying style. Her eyes are closed and she is very still. The traffic is moving around her in blurs on all sides. A smoky white spirit flies out of the top of the Little Girl’s head and rushes upwards through the blue sky and then into the dark Universe where it lights up the Universe and then rushes through the bottom of an adult Woman meditating in a sitting pose and up into her whole body. She begins to move through a series of Taoist poses. The Universe changes colors gradually. The sounds of gentle breathing are present throughout the Universe. The Woman does a final pose

where she folds herself into the shape of a conch shell and the environment changes to a seashore, with the shell lying on the beach. The Little Girl picks the shell up from the sand and she listens to sounds inside the shell's opening. She closes her eyes and concentrates on the sounds in the shell.

The Woman and the Little Girl are sitting and meditating on opposite sides on the surface of the large open book in the Universe. The book gradually closes and the two females disappear in the closed book, and the book turns and reveals the title on its cover: *Tao Te Chin* (Book of Taoism).

Rationale

My creative intent is not only to animate the two characters in *Unit*, but also to unite them and to connect them to the society, nature and the Universe within the film.

The idea for this work is a refinement and simplification of Taoism concepts. My intention is to bring together two series of my Mother's works. One series consists of paintings that show the changing gestures and environments of the adult Woman who is practicing the Taoist poses in the Universe, and the other is a series about the spiritual Little Girl.

In addition to the Taoist teachings and philosophy, *Unit* is inspired by the *Matrix* animation version films for their complex visual storytelling, and a short animation titled, *Limit Cycle* (part of the *Genius Party* series of animation by Studio 4 Centigrade in Japan) for its visualization of a philosophical idea.

Techniques

Unit will be a 2D based animation with 3D effects. The characters are adapted from my Mother's oil paintings, and the backgrounds are digital drawings in Photoshop. The elements in the environment, such as smoke and bubbles, will be 3D in Maya. The work will be animated and composed in After Effects and Final Cut Pro, and the sound will be edited in Soundbooth.

Background Information

Tao Te Chin leads to the discussion and exploration on the true infinity, which is not realized by conceiving or describing, but experiencing. It sounds ambiguous to pursue something that already exists, or to prepare oneself for something that may not exist. But why have people believed and practiced Taoism for many thousands of years? Why is *Tao Te Chin* still the essential reference of Traditional Chinese Medicine? And why are Taoism masters able to foresee disasters and also locate them? It is so mystical and so fascinating, and I am interested in making a short animation about Taoism ideas.

The animation is not narrative based or purely abstract, but more likely a visualization of a Taoism instruction. It breaks down the questions I mentioned above, and answers them in general: Where the individual's infinity come from, how to relate personal

infinity to the Universe in order to strengthen the individual, and most importantly, how to unify oneself with the Universe in order to experience the true infinity. There are two main characters, one is a little child and the other one is a mature female, and they represent one's infinite spirit and temporary body. *Unit* will show their interaction as the Woman practices Taoism and the Little Child experiences the real world, and finally they will unify as one in the Universe, and that is the ultimate form of infinity.

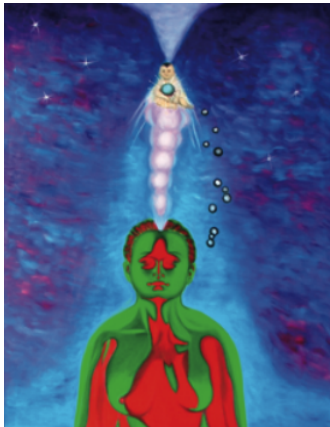
Paintings by Hanjinying

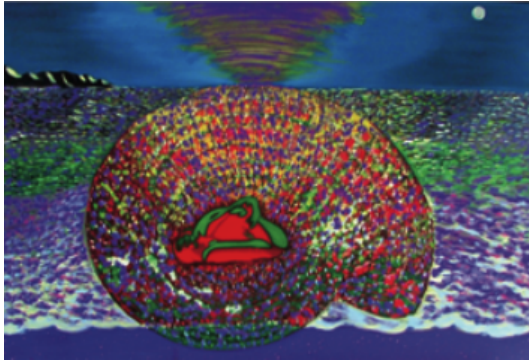


The Little Girl



The Woman





The Conch Shell

Unit Timeline

Fall quarter 2010: Storyboarding, technique tests, backgrounds, sound and music investigations, and production of an animatic.

WEEK	1	2	3	4	5	6	7	8	9	10
Storyboard										
Find and deliberate with music composer										
Scratch soundtrack for Animatic										
Experiments with technique										
Animatic production										
Backgrounds production										

Winter quarter 2010-2011: Keys, layouts, color/effects tests, In-betweens, sound and music development.

WEEK	1	2	3	4	5	6	7	8	9	10
Animatic refinement										
Keys										
Layouts										
Color/effects tests										
In-betweens										
Final music										

Spring quarter 2011: Visual effects, compositing, final music and sound, render, mastering and duplication.

	1	2	3	4	5	6	7	8	9	10
In-betweens										
Visual effects										
Compositing										
Render										
Mastering and duplication										

Unit Budget

Category	Item	In Kind	Actual Costs	Total
Supplies	Pencils		20	20
	Oil color		20	20
	Papers		40	40
	DVD mastering and duplication		3*20	60
	Labels		3*10	30
	Hard Drive		80	80
Tools	iMac	2000		2000
	MacBook Pro	1800		1800
	Wacom	400		400
	CINTIQ	2000		2000
Software	Adobe Creative Suite 4 for Education	2000		2000
	Maya2010	2500		2500
Music	Composer fee		200	200
Festivals	Festival entrée fees		30*10	300
	Postage		5*10	50
	Shipping		20*10	200
Total		9,700	1,000	10,700

Additional Images



Samples of the series painting, *The Little Spirit* by Jinying Han, which inspired me the design of the child in the Universe.



Samples of the series painting, *Meditating* by Jinying Han.