Mudboy: An Animated Short Story of Procrastination

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Thesis Title: Mudboy
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Committee Approval

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Abstract

Procrastination is becoming an issue of people daily lives. This thesis aims to use a short film called Mudboy to investigate what is the main factors that caused procrastination, and raise public awareness of procrastination, through a story about lazy boy whom turns himself into mud whenever he feels like running away from doing his work. Mudboy was developed based on a strictly scheduled plan. More specifically, in the first stage, research and planning were conducted, with significant emphasis on idea creation, story creation, and animatic design. Following the theories and evidence of comprehensive research, a 3D animation story integrating fluid motion concepts combined with a narrative is applied to dramatize the impacts of procrastination upon human behavior. In this stage, modeling for characters was conducted, along with scene design, scene modeling, layout, and mapping and textures. As the leading figure of the story is a boy, a series of character models and sketches are designed in different statuses, including liquid status, various facial expressions, and so forth. When it comes to the story plots, with applications of character modeling and scene modeling. The final phase of the whole thesis covers character animation, lighting, and rendering. In the end, the thesis concluded three main methods, which are changing the environment, focusing on the process and offering reward, to overcome procrastination. This thesis illustrates the cause and effect of procrastination, hence it reminds audiences to pay attention to procrastination and to surmount procrastination.

Keywords: Procrastination, 3D, Animation
Dedication

Before enrolling in RIT, I had completed some 3D related courses; however, these mainly covered the basics, and there had been barely any attention to 3D animation design. Daniel DeLuna, my thesis advisor for Mudboy as well as our professor in 3D courses, introduced a renderer developed by Pixar called RenderMan, which proved to be the most appropriate tool for animation rendering. Daniel was such an inspiring mentor to me when I encountered difficulties and challenges during the completion of this thesis. Ihab Mardini, my other thesis advisor, who is well-known for his outstanding achievements in animation character design, provided me with numerous amazing ideas involving the application of simple methods, such as blend shapes, render passes, and so on, to realize complicated functions. Blend shapes was applied to allow flexible control over the vivid facial expressions without requiring a rig. Moreover, as Ihab pursues perfection in his pictures, all his suggestions regarding color matching and plot design were inspiring and valuable to me. Nancy Ciolek, to whom I would also like to express my gratitude, regularly discussed with me my progress in the thesis project, which effectively helped me avoid any disturbance from procrastination and arrive at highly efficient time management. Her valuable advice concerning the foundation of various scenes was indispensable to my thesis project, especially when she provided me with a wide range of convincing research references to support my theoretical arguments.

I have been so honored to be guided and inspired by all three of my advisors, who are my mentors as well, throughout the thesis project. Words fail me when expressing my gratitude to them, and I believe and hope that this thesis project will finally live up to their support and expectations.
Introduction

*Mudboy* is a 3D narrative about procrastination. Procrastination is an act of self-regulatory failure, which could lead to negative impact on performance (Ariely and Wertenbroch 2010). The leading character, Mudboy, is a boy who seriously suffers from procrastination in his daily life. Throughout this story, many scenes are designed based upon events in our everyday life, including quitting social media, indulging in amusements, and prefer to avoid doing everything until the last minute. During his procrastination, Mudboy experiences a physical change from solid to liquid, which can be identified as a metaphorical rendering of procrastination.

![Figure 1- the flow](image)

Personally, I was once such a “patient” as Mudboy, constantly being disturbed by procrastination. I could not wake up in the morning and usually did not get out of bed till the afternoon, which led me to stay up late at night and kill time by playing computer games and watching videos. I enjoyed my lifestyle at that time, but, due to inefficiency in time management, I hardly had any time to study and refused many social activities. Gradually, my friends left me, resulting in no more social activities for me to join. I stayed at home all day long, speaking not a single word to anybody yet fully immersed in my computer games. I did not realize the bad impacts of my lifestyle then, until my best friend warned me.
Figure (2)-Sketch

Figure (3)-Expression
Procrastination is a devil, killing people’s will and integrity. It is very difficult to overcome procrastination, as it requires continuous steps, incrementally walking, or even crawling, out of one’s comfort zone. What is even worse is that there is an increasing number of people in today’s society encounter with various threats from procrastination. For instance, labs are particularly full on the last day before tests and exams and most assignments are uploaded just shortly before deadlines even in the last 60 seconds. Thus, Mudboy is not simply an animation introducing procrastination, but more importantly, one that raises the concern about how to balance the pleasure in life that can be gained from putting things off with the dangers of doing so.

Figure (4)-The figure of Mudboy
Proposal and Inspiration

In today’s society, people are faced with quite a wide range of activities to entertain themselves, which are also seductions. As one popular writer in China once suggested, “in a metropolitan city, the easiest way to screw someone up is to make him stay in a small silent room with network and a phone to call food delivery; then, he begins to fall”.

I preferred not to believe in such a depiction of the depravity of human beings, until I encountered the reality. This happened at our classmate reunion when I met Michael, one of my best friends from high school, again after quite a long while. He was changed so much that I could hardly recognize him. With curly hair and a big belly, he put on weight and looked like a middle-aged man living in serious disappointment with his work and life. Michael told me that, after graduation, he bounced around between several jobs but ultimately quit them all due to various dissatisfactory aspects, and decided to stay at home living on the allowance given by his parents and a humble income from his on-line part-time job. Throughout the whole year, he hardly went outside and only played computer games at home, sleeping during the daytime, waking up at night, and eating junk food. Perhaps due to lack of social activities, Michael showed some numbness when we were talking, and usually took several seconds to give a response.

Based on my interaction with Michael, it struck me that the low general quality of long-term indoor life could significantly change one’s way of thinking, one’s health and appearance, and other aspects of one’s life. It is quite understandable that individuals prefer to stay in a certain comfort zone; however, once this comfort zone is set, the individual might become extremely addicted to life within the comfort zone, and might no longer dare to step outside. Dependence upon the comfort zone indeed can be understood as one of the signals for the fall of someone’s life.

The flowerpot effect, as one well-known term in psychology, refers to a situation where an individual would rather stay in their cozy “flowerpot,” as they are becoming quite satisfied with the current circumstances and are not looking forward to progress any more (Wang 2001). In other words, suppose someone happily repeats what he or she does every day without any intention to make progress; then, his or her knowledge would remain the same and stay bound within the comfort zone, even after years.
Production Process

This section describes the methodology used to create and illustrate Mudboy. It begins by introducing the ideation around and describing the story, followed by a look at the production process and further developments. As a first step, it was important to research studies of procrastination. Sirois and Pychyl (2016) explored and highlighted the negative consequences of procrastination. They claimed that procrastination would have negative affect on the consideration of consequences in the future and episodic future thinking, which especially in procrastination-related decision making abilities.

Description of the Story

The story of Mudboy begins with his morning at home, and with a generalized procrastination-related problem relevant to everyone (Klingsieck 2013), that is, getting up on time. For example, when you are supposed to wake up early in the morning for a class, the idea of sleeping for five more minutes very often occurs to you; however, when you open your eyes again, it is often another hour that has passed. This could be recognized as a sign of light procrastination. However, in the story, Mudboy usually loses control over the form of his body when he gets up and washes up due to procrastination, which is vividly represented in the design as his body changes from a solid form into a liquid one.
The Figure (3) shows it is the first time Mudboy saw himself melting into mud as he put off to get up and remains such till he arrives at school. His sluggish status, physically reflected via the change into liquid, is aimed to represent procrastinating people’s reluctance to do the things they need to do.

On arriving at school, Mudboy, who remains liquid, greets his teacher and then silently sneaks into the classroom. After being seated in the classroom for about thirty minutes, Mudboy, feeling so tired, then becomes wet and turns into liquid again. However, this time, his liquid flows from his body and spreads to his classmates, who become liquid as well. It is a scene that is designed to illustrate that procrastination is contagious, just as it is in our everyday life. For instance, before an assignment deadline, when you find someone else still struggling and not yet uploading any draft, you might comfort yourself that it is okay to take your time and have no worries; yet when all surrounding students complete the assignment, you might also be greatly encouraged and become determined to catch up with them. Such contagious impacts of procrastination could to some extent be explained by the Flowerpot effect, as discussed above; specifically, procrastinators might very well become closed off and reluctant to communicate with others if they fail to catch up with others (Wolters 2003).

After school, Mudboy huddles up in his chair in liquid form due to his reluctance to complete his homework; suddenly, his alarm rings. He slowly stands up from his chair, at his desk, types something on his notebook, and finally clicks the “Done” button, the very last minute prior to the deadline. In contrast to his slow movements from chair to desk for homework, however, Mudboy moves really fast from his desk to the TV. During the last episode in the animation, Mudboy is playing a video game, but the TV breaks down all of a sudden, and lights come on in the walls all around him. Mudboy tries to touch these lightened walls, which are approaching him, but he feels extremely miserable. The approaching walls represent the boundaries of one’s comfort zone; if one stays there, the boundaries will shrink and one will ultimately rub up against them. To break these walls at this stage is very painful, but is the only hopeful choice. At the end of the story, Mudboy disappears into the lights, and it is left to the audience to decide whether Mudboy breaks through these walls into a new world or continues his suffering from procrastination.
Storyboard/Character Sketch

Mudboy, the leading character in this story, is a person seriously suffering from procrastination, as shown. Based upon many real examples of my friends, my classmates, and myself, Mudboy is shown lying on his desk, being lazy in the morning, etc. Moreover, I also interviewed someone with procrastination issues. After talking about many specific problems he faced due to procrastination, he revealed that he actually did not want to live that way; however, whenever the tiredness came up toward him, he would easily give up on things that he was not very interested in. I attained a good amount of inspiration from him in terms of my design of the character. In accordance with his appearance, the three views (front, side, and back) of the character, in liquid and solid, were more vividly created.
Character Modeling

Based upon the three views, a 3D model of the character was designed in Maya, including the body proportions, etc. In Mudbox, the textures and details of the character’s clothes were first drafted; after the low-model typology, different qualities were drawn via Substance Printer; and last, render to texture was completed.

Texture Maps

If high-model and high-precision materials had been applied to achieve rendering in Maya, it would have taken much more time to complete the rendering process, and, moreover, would have caused difficulties in processing due to too many faces. Thus, four maps were applied, as follows, so as to reduce the rendering time for the sequence. Also worth noting is that this method yielded more efficient control over different chartlets in different objects, which should provide great convenience for inputs and outputs between different software versions in the future.
During processing of the character’s movements in the animation, the characters were generally put into Maximo so as to achieve preview and tests of character movements. When confirming whether the movements were consistent to personalities as well as statuses (liquid or solid), by confirming the root joint, I conducted subtle adjustments upon every single joint until the movement was correct, and meanwhile, avoided interweaves between models.

As to management of facial expressions, the blend shapes function in Maya was applied. Prior to the creation of characters, the emotions to be reflected through their looks were completed in the model;
then, blend shapes was used to connect the head models carrying these expressions with the original head models. Thus, at this time, upon the head models, a sub-catalogue was present, to provide different options to match facial expressions with the emotions in an effective and efficient way. This method is very suitable for creating short animation.

![Expression](image)

**Figure (9)**

**Liquid Effects/Technical Issues**

Animation effects on liquid are highlighted throughout the whole animation story (Ament 2009). In order to perfectly realize the liquid effects, I referred to a wide range of literature and materials. Firstly, Realflow was applied to make the liquid effects; however, liquid experiments on quad faces were not supported in Realflow, and thus, Houdini FX was also adopted so as to achieve the needed liquid content. However, due to computer limits, liquid quality was not optimal.
This is the first time I make a complete 3D character animation. At the beginning, I had a lot of difficulties, including how to make a detailed plan and many technical challenges. In the production process, I had to estimate as accurately as possible the time of each link in order to complete the animation production in limited time and ensure high quality at the same time. Despite having technical challenges almost every day, I did learn more 3D technology therefrom. Besides, I also needed to consider trade-offs and choices in the previous planning process, such as rendering with render farm or a single PC. The rendering speed of render farm is faster and unstable, but you have to spend half of the time for waiting if you use single PC in rendering. Once all the sequential frame rendering are completed, you would find you have to spend a lot of time for waiting. Furthermore, the production process is not always as you expect. If you want to get the best result, you have to learn the latest software and technology as the version iterates. Undoubtedly, technology is just an aid tool, an approach to realize your high-quality work. A very important step in improving the quality of your animation is to refer to a lot of pixar and Disney's high-quality animated movies, observe the use of depth of field, color tendency of the picture as well as the light source and the change of light and shade in each scene. Before making animation, I mainly referred to "Big Hero 6" and "Coco", from which I used the picture effect and light and shade contrast in many animated movies for reference, and learned how to promote the development of storyline through the change of picture environment.
Figure (11) Liquid Status

**Rendering/Lighting**

RenderMan was applied in the rendering process, first because, as a rendering tool produced by Pixar, which is effective particularly for the creation of short animations featuring cartoon characters; moreover, as a variety of lighting options are provided by the program, different scenes could be properly matched with the most appropriate light (Christensen et al. 2018). Specifically, in the first scene, the light was designed to be at the highest level and then gradually faded into darkness, which was aimed to indicate Mudboy’s negative changes as his procrastination worsened; by the end, the scene was totally lit up at the brightest setting, so as to provide a contrast and raise reflection from the audience.
A render pass was also applied as technical support during the rendering in order to categorize diversity in rendering performance; the technique of Subsurface was applied as well (Wu, Deng and Paul 2015), to make the character’s skin more real and vivid.
Sound and Music

All sound and music materials were personally collected from daily life such as “sound of footsteps” “snore” and “liquid sound”. The main character’s voice was recorded by myself and input to Adobe Audition 3.0, and then re-edited to be combined in the after-effect process.

Evaluation & Discussion

Fluid animation and special effects were a daunting challenge for me. In order to overcome it, I have learned a lot of professional modeling skills including some coding. This is a spirit I want to express through Mudboy: that of overcoming difficulties and learning new things.

As a popular saying goes on the internet, what suggests that one is old is neither maturity nor silence, but resistance to making any attempts to do new things and to situate oneself in a new environment (Pohlhaus 2019). Ceasing to learn and only enjoying one’s current situation might very well result in a huge step into mediocrity all on its own; Plenty of people learn their whole lives long and do not achieve much in realms other than learning; plenty of very stupid and unlearned people are wealthy, powerful, etc. however, procrastination will only worsen the case.

Thus, efforts should be made to raise public concern regarding procrastination in today’s society. Procrastination is an invisible, silent killer, gradually taking your time and finally ruining your will.

In my user testing, a total of 67 user questionnaires were sent out in different age groups and backgrounds audience, and some feedback and evaluation on procrastination were obtained. 86% of users felt that using such a relaxed and funny liquid animation was an excellent way to express procrastination, so I retained the effect of liquid animation instead of a balloon-like effect, 30 percent of users feel that the transition of the lens in the film is too sudden. For this problem, I try to keep the continuity of the picture while changing the light and darkness between the two lenses. At the same time, I also adopt many excellent opinions from user testing, such as the optimization of the scene and the placement of objects in the scene.
Conclusion

Through this thesis project, I have achieved considerable new knowledge and skills, particularly in short animation design. I would like to show my great gratitude to my professors and my classmates, who generously offered me their help. With zero knowledge of Houdini, a very complicated program, I encountered a series of difficulties and challenges, as making a vivid character does not simply require modeling, but also many cooperative compositions using different materials, lighting, expressions, chartlets, etc. This was a very challenging project as some software are new for me, during which I was placed under serious pressure, but, when that little Mudboy stands on the screen, my efforts have paid off. Due to time limits, many details were left at a suboptimal level, but I am still very proud of myself and my thesis project. This thesis project not only represents my sincere desire to raise public awareness about procrastination, but has also encouraged me to learn new skills and step out of my comfort zone.
**Artist Statement**

This statement was written in April 2019, nine months after I left RIT. I would like to write something about my understanding and experience in my work according to my graduation project. In our daily life, we are easy to be influenced by habitual thinking, and easy to confine our thinking to the problem itself. If we jump out of this framework for a while and think in reverse, maybe there will be different inspirations. Why is playing games so attractive? What makes you give up that you should have done but to play? If these elements are applied to our life, learning and work, what kind of effect will be produced?

I’m a game designer now. During my work, I found that the sense of seeking a goal is very important for a game, whatever the goal gave by the game player or the game designer. A long-term goal is composed of many small goals. For instance, you spend 5 minutes in the game to complete a simple task, and then you get a piece of green equipment. If you have done a lot of small tasks, you will get a set of green equipment and will be able to do more difficult tasks and get better equipment. Personally, I think that is one of the reasons why most people are addicted to games. Because the game can give you goals, such as "today, I want to get a higher score", or "today, I want to survive in the game for more than 8 hours" and so on. Life does not give you goals, only if you give goals in life by yourself. One of the symptoms of procrastination is losing the sense of seeking a goal that you gave to yourself.

In the past, I once gave myself a task which is to use EXCEL skillfully. However, I found it was difficult to continue with the task based on old thinking and practice. One reason is that I am not interested in this tool at all; another reason is that although there is a job requirement, I can get away with it. For example, I can download the form or prepare the entire data analysis report by learning from many other reports. Then I gave it up.
Therefore, I sum up three methods to overcome procrastination:

(1) Change the environment.

Look for an environment full of self-disciplinarians and surround yourself with self-disciplinarians. You could go to the library or study room at school. At that time, I would like to choose to study in the study room after work or on vacations. The university is far from my home and it takes an hour for me to go back and forth, but I don’t mind. If I stay at home, I may lie on the couch and fall asleep after a while. This will waste more than an hour. During the one hour, I could fully use my time to memorize words or listen to the podcast. Thus, changing the environment would help me to behave myself.

(2) Focus on the process

Most of the time, our procrastination is because that we believe that a task is very difficult. Then we procrastinate until we have to do it. However, if we turn our attention to the process, we will not have too much fear, and procrastination will have much less control on us. You might say that you could not finish a 20-page paper within 60 minutes, but you could not deny that you could finish part of your paper within 60 minutes. It would be better than a procrastinator who is afraid to start doing something.

(3) Offer reward

In addition to the above two methods, you also need to adopt the last method, which is offer reward. You can give yourself a reward after a day of productive work. You can define a standard according to your actual situation. For example, you spend 6 hours to finish reading half of the original English book or you spend 5 hours to write a 5-page paper. For the reward of doing these things, you can watch a movie or go to watch the game with some friends. You will have no guilt to have a relax. However, doing nothing and continuing going out for fun would always bring you a sense of guilt. After all, we could be as lazy as mud, but we could not be as comfortable as mud.
References


Appendix

Working Title: Mudboy

Director: Wentao Huang

Advisor: Nancy Ciolek, Daniel DeLuna, Ihab Mardini

Technique: 3D animation

Design Software: Maya, Substance Printer, Houdini FX, After Effects

Start Date: February 2018

End Date: June 2018

Running Time: 3 minutes 1 second

Format: MP4, MOV
Timeline and Schedule

**Figure (14) Design Timeline**

**Figure (15) Schedule(1)**
Figure (16) Schedule(2)