Bitter Tea
A Journey of Nostalgia

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Abstract

This thesis explores the potential for the 3D design and modelling of digital assets to evoke a nostalgic reaction within a short, animated film. Some of the complex feelings triggered by familiar things and memories in life, and small objects or moments in people's lives, can make us feel like we are transported to the good old days. Years of living alone abroad, far from home and family, have frequently triggered my nostalgia. Not limited to individuals, nostalgia is now being studied and applied in many industries. This phenomenon also appears in the animation industry; excellent animation works can arouse the audience's empathy, allowing more people to experience the charm of nostalgia and rich emotions. The intense feeling of nostalgia is multiple and mixed; analysing and understanding self-directed nostalgia is the central point of this research. The contextual review explores the visual connectivity of objects that trigger nostalgia and other elements such as sound, smell. Analysis of great animation works identify techniques that create a nostalgic atmosphere or storyline by controlling objects, lighting, texture, and colour. These creative techniques are effectively applied through the animation practice conducted within this research. Some changes during the practical production process demonstrate the advantages of 3D animation that can be flexibly adjusted in the materials, scene and character construction to meet the various needs of designers.

This project engages with autoethnography to link the researcher's emotions with nostalgia through a practical exploration involving 3D animation. The story content of the animation is adapted from actual events and memories from the researcher's life, and the characters are based on members of her family. Loneliness, guilt and love mix with nostalgic memories to become complex emotions represented through the story design. In the animation design, Chinese opera music and regional cultural elements guide the audience's feelings; let the audience more concretely experience the nostalgic state of mind as the stranger drawn by the culture of the hometown. The animation subtext tells the story's development, leaving room for the audience form their own emotional associations. 3D animation is a method of exploring topics that is not limited by space or materials and communicates the enthusiasm, healing and courage brought on by nostalgia.

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Attestation of authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the Acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

SIGNATURE:

Date:01/12/2022

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Introduction

The objective of this project is to explore the factors that trigger nostalgia and the effects of nostalgia in order to explore the potential for the 3D design and modelling of digital assets to evoke a nostalgic reaction to the cultural background of my hometown. The research aim of this project is to understand nostalgia and its triggers, analyse how nostalgic elements have been used in animation, and apply this learning and analysis to the innovation of a short animation using 3D technology. The project shows the potential of 3D animation in the process of exploration. Based on the characteristics of 3D animation that are not limited by space and material, it can create elements and scenes that designers need to evoke nostalgia.

The theme of nostalgia came from my personal experience of homesickness and long-term yearning for the hometown and relatives of a person living abroad, as well as the frequent nostalgic feelings triggered after experiencing the separation of life and death. When I was under tremendous pressure or in an unstable mood, I would feel nostalgia for my deceased family members. Although it was sad, every time I experienced nostalgia, my pressure and anxiety were relieved, and I was more motivated to do things next. In the exploration process, I found many animations use nostalgia as the theme or add relevant elements to tell stories and express emotions; usually, such a storyline can arouse people's empathy and guide people's emotional changes better. In addition to learning and practice, combining 3D animation technology with my own experience to explore uncertain emotions has been of value for me to share and record memories.

The exegesis that accompanies this practice-based research project comprises a contextual review, research design, and critical and reflective commentary on practice. The Contextual Review section is devoted to a detailed discussion of nostalgia, including its origins, evolution, current meaning, evocative objects, elements and an analysis of nostalgic animation reference. The Methodology section describes the research design of this project, which shows that this is an autoethnographic and practice-based research project, and identifies the methods used. The Critical and Reflective Commentary in the Practice section is a process record and critical reflection on research practice; it shows innovations, mistakes, reflections and adjustments from the process of inspiration investigation to animation production. The

conclusion at the end of the thesis covers my new learning of nostalgia, nostalgic elements' application in animations, and the possibilities and limitations of this project.

Positioning statement

Living overseas long-term and the hurdles of the Covid-19 have prevented me from returning to my hometown to visit my family, but seeing items related to my hometown or loved ones creates nostalgia. Memories and emotions are often triggered at a particular moment, and the different factors that trigger this nostalgic emotion have aroused my desire to explore. The exploration process involved some regional cultures of my hometown, such as funerals and Qin Opera. Because there are some differences in cultural customs around the world, to help the reader's understanding of this research I will briefly introduce and explain the customs mentioned in the research in this statement.

The animation begins with a funeral, which is a sad and unusual beginning. There is a word on funeral wreaths (奠，dian) that means burial for peace. In my hometown, people believe that burying the deceased in the soil will allow their souls to rest in peace and return to nature. The remains will be placed in iced coffins for several days, and relatives and friends of the deceased will perform a farewell ceremony before the remains are buried. The placement time of the remains is determined by the relatives of the deceased, mostly 3-7 days. The iced coffin is placed in the mourning hall, and some memorial props will be placed in the mourning hall as well. Items that often appear at funerals are portraits, incense, wreaths, and fruit bowls; people often wear dark or black and white clothing when expressing condolences to the deceased.

The old radio in the animation plays Qin Opera, a regional opera in Northwest China and a national intangible cultural heritage of China. In Qin Opera, historical or folk stories are sung in the Shaanxi dialect. With the change and progress of the times, the popularity of Qin Opera among young people is gradually declining, and most of the people who can sing Qin Opera are the elderly. This phenomenon also appeared in my family; my grandfather liked Qin Opera and could sing it very well, my father can hum, and I can only understand it. Therefore, Qin Opera is the most familiar and unfamiliar hometown culture to me.

Contextual Review

Introduction

This chapter explores concepts related to nostalgia, evocative elements and applications, and references of animations that successfully interpret and create nostalgia. A number of concepts accurately explain the complex feelings of sadness, longing, and encouragement that I have experienced. These key concepts are the theoretical support of this research and also guide the practical part; each key point is related to the animation outcome.

Nostalgia: origins

The term 'nostalgia' was coined in the 17th century by the Swiss physician Johaness Hofer (1688/1934), but references to the phenomenon it denotes can be found in Hippocrates, Caesar, and the Bible (Sedikides et al., 2008). The word "nostalgia" derives from Greek roots that mean "homecoming" and "pain", and was to describe the anxieties displayed by Swiss mercenaries fighting away from home (Fuentenebro de Diego & Valiente Ots, 2014). Nostalgia used to be considered a psychological disease, where people were suffering and anxious because they were obsessed with missing someone. In the 17th and 18th centuries, nostalgia was a bad omen equated with homesickness and it was found from Swiss mercenaries; even until the end of the 20th century, nostalgia was not separated from homesickness. Psychodynamic methods of identification and research reached the conclusion that nostalgia is different from homesickness, for example, adult research participants associate the words warm, old times, childhood, more frequently with nostalgia than with homesickness (Panelas, 1982).

Nostalgia: contemporary functions

The present meaning of nostalgia is far less pejorative than earlier usages. According to Sedikides et al (2008), " Nostalgia may facilitate the use of positive perceptions about the past to bolster a sense of continuity and meaning in one's life" (p. 306). Nostalgia has been found

to have critical psychological functions, such as improving mood, increasing social connectedness, enhancing positive self-regard, and providing existential meaning (Sedikides et al., 2008). For people who have had similar experiences, nostalgia can bring people closer together (Wildschut et al., 2006). Good nostalgia is regarded as an emotion beneficial to social development and group construction in modern society.

In a business context, reminiscence facilitates the interdependence of individuals in a group, and designs that incorporate reminiscence also greatly satisfy consumers' sense of belonging (Loveland et al., 2010). Nostalgic elements are used in product design today, which can bring consumers a sense of security and promote consumption. The business research journal, *Consumer Security and Preference for Nostalgic Products: Evidence from China* (Zhou et al., 2013) presents a survey that explores people's preference in the Chinese market for products with nostalgic designs, nostalgia proneness, existential insecurity, personal insecurity and social insecurity; due to memories of old items, products with nostalgic design can offer people some sense of safety in consumption. The data summaries of these market surveys also contain some design principles that I can refer to. For example, old and familiar things tend to bring people back to memory lane, so the feeling of oldness can be factored into the design. As a result of this positive and beautiful emotion, nostalgia has also gradually become a familiar element in design, successfully integrating with games, fashion, music, and art; the usage of nostalgia elements creates an atmosphere and tells the story to bring the audience or consumers into the memories.

Nostalgia is understood as a variety of meanings – to a certain extent nostalgia is functional and beneficial. The article 'Finding Meaning in Nostalgia' (Sedikides and Wildschut, 2018) examines the meaning, ability and benefits of nostalgia. Nostalgia is usually a process from a difficult beginning to a happy ending, akin to redemption. Individuals usually define nostalgic content to a scene and participants, nostalgic events involving childhood or close people. Nostalgia sponsors usually take a gentle filter to look back on the past. Longing for that time or relationship can also be fulfilled and happy through nostalgia and sadness (McAdams et al., 2001). Nostalgia is considered to be a self-related feeling of sadness or longing because the self is the protagonist in the nostalgic experience (Sedikides et al., 2004). The animation design of the practical part is closely related to my life experience; the nostalgic journey of the protagonist is a mixture of sadness and longing. Some studies have also shown a positive association between nostalgic meaning and motivation, curiosity, or exploration (Steger et al.,

2008). The researchers conclude that the trigger of nostalgia buffered people's anxiety and adjusted the pressure; nostalgia helps people find their purpose and restore psychological peace when they are confused and lonely. Nostalgia can bring happiness to people whose lives lack meaning, which is positively correlated with happiness (King et al., 2014).

Evocative elements/objects:

Recreating a scene with symbolic objects creates an atmosphere that brings the person in it closer to the emotions experienced or to remembering what happened in the scene. In some museum exhibitions, visitors can be emotionally connected to objects and scenes they see without sharing memories with the objects on display. There is a word "aura[1]" that can express this emotion. Creating an aura recreates the vibe that resonates and evokes nostalgia more effectively. Aura is the sense that visitors get when they see the reviews and the atmosphere of the people who have used the objects and feel that they are still alive, and this aura brings visitors of museums and owners of collections closer (Hunter, 2015). Walter Benjamin mentioned it in his influential 1936 essay, *The Work of Art in the Age of Mechanical Reproduction*. Benjamin argued that 'even the most perfect reproduction of a work of art is lacking in one element: Its presence in time and space, its unique existence at the place where it happens to be.' He referred to this unique cultural context i.e., 'its presence in time and space' as its 'aura'. Objects that can arouse emotional resonance bring visitors' thoughts, senses, and feelings into the owner's world. The used traces on the collections can make the viewer associate with and immerse himself in the stories that have happened (Benjamin,1936). Museum collections research and statistics on objects that evoke nostalgia show that old things or the daily necessities that people are familiar with can certainly take the user or audience down memory lane (Benjamin,1936). Experience and memory are part of the reason an object can trigger some emotions. According to Benjamin, aura is a quality integral to an artwork that cannot be communicated through mechanical reproduction techniques – such as photography. However, representing objects on screen may assist in evoking nostalgic emotional resonance.

Objects are vehicles for stories and cultures, an object may resonate with people because of shared or common memories. Many moments in life may trigger nostalgia and empathy due to seeing something familiar or being in a previously experienced situation. This research is

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[1]Aura: a subtly pervasive quality or atmosphere seen as emanating from a person, place, or thing.

linked to my personal background and experience, and therefore the exploration of nostalgia in this research is mainly embedded within Chinese culture. This includes consideration of the Chinese four-character idiom[2] 睹物思人[3]Du Wu Si Ren, which means to see an object and feel homesick for others, and therefore describes situations that trigger nostalgia. I also put such elements into the animation production. In the animation, grandfather's old radio, Erhu and tobacco pipe are also objects that can trigger memories of the protagonist. When grandpa passed away, the things that used to accompany him and the things he did often become an important medium to remind the protagonist of the story of her memories.

Evocative materials

Objects that evoke nostalgic empathy have some characteristics in their aesthetic appearance and designers can manipulate the physical properties of objects to evoke certain emotions. For example, according to meanings of materials through sensorial properties and manufacturing processes (Karana, Hekkert, and Kandachar, 2009), natural materials and some metal materials are considered good at evoking people's nostalgia or triggering some old memories. Materials such as copper, iron, bronze, and natural materials like Bakelite, ceramics, wood and leather are regarded as reminiscent materials that can evoke memories. Particular properties are commonly used as signs for attributing meanings to materials, such as hardness, roughness, and glossiness (Karana et al., 2009). Objects that look heavy, dark-coloured (like brown), or dull are also likely to bring back memories.

Evocative Scents

The olfactory element is also an element that causes nostalgia. In several experiments and studies, the extent of nostalgia has been quantified, turning nostalgia into a measurable trigger for further research. As mentioned above, nostalgia is positively correlated with the meaning of life. In a scent-related nostalgia experiment (Reid et al., 2015), participants were asked to report how nostalgic they felt when they were given a specified number of different scented oils and to rate how nostalgic they felt for two meaningful choices. The analysis showed that the higher the level of nostalgia evoked by smell, the greater the meaning of life. Hirsch (1992) found in his study that smells caused nostalgia with different age preferences. The elderly were more likely to experience awakened childhood memories through natural smells,

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[2] Idioms (ChengYu) are a type of traditional Chinese idiomatic expression, most of which consist of four characters.

[3] 睹物思人: Du Wu Si Ren in Chinese

while the young were more likely to trigger childhood memories through food or artificial smells. Scholars call this phenomenon of awakening forgotten memories in the early years triggered by smell the Proust effect (Chu & Downes, 2002). Most memories recalled by this effect are autobiographical memories, and personal nostalgia is closely related to individual life circles (Stern,1992).

Many animated films visualize the sense of smell to induce the audience, such as the scene where the food appears. The pictures of food in Hayao Miyazaki's animations make the food in the picture seem to be full of magic (Figure1). This food in the image with hot steam, lustre on the surface and the oil ripples on the soup; such a picture seems to have smelled the aroma of the food and felt the temperature. The use of smells and tastes to evoke nostalgia and homesickness has also appeared in the animation *Chūka Ichiban! (Cooking Master Boy)*. The protagonist makes delicious food similar to his mother's homemade meal and misses his hometown and mother (Figure 2). It is a manifestation of olfactory memory to often taste a meal cooked by his mother and then taste or smell it again and recall a scene from the past. Olfactory cues may easily evoke nostalgia associated with emotional memories (Reid et al., 2015).

Figure 1: Food from *Howl's Moving Castle* and *Ponyo* (Miyazaki, H, 2004, November). *Howl's Moving Castle*. Studio Ghibli. (Miyazaki, H, 2008, July). *Ponyo*. Studio Ghibli.

Figure 2: The food and scent reminds Mao of his childhood memories with his mother (Anno, M. 1997, April). *Chūka Ichiban!* Nippon Animation.

Evocative Sounds

Sound is another element that triggers nostalgia. In the article '*Death by Nostalgia: a Diagnosis of Context-Specific Cases*' a study shows that sound can effectively trigger nostalgia, and nostalgic music makes people feel the continuity of life. Music is often associated with something in an individual's life to a certain extent. Hearing old songs previously heard may be associated with memories, thus generating more nostalgia-related thoughts and feelings (Baker & Kennedy,1994).

Hearing music or lyrics from one's hometown triggers memories associated with that music. In the practical part of this research, some Qinqiang[4] opera has been applied as evocative sounds. A radio plays the Qinqiang opera in the animation, consistent with my real life; in real life, my grandfather liked listening to the Qinqiang opera very much. Most of the content of Qinqiang opera is about history and folk stories. The simplicity and ruggedness of Qinqiang opera are also consistent with grandpa's personality. In the story, grandpa's teacup, the way he drinks tea, and the radio he often carries have become his characteristics and representatives, as well as evocative elements.

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[4] Qinqiang Opera is a local Chinese opera that mainly thrives in north China's Shaanxi Province, as well as its neighbouring regions in Northwest China, like Gansu and Qinghai provinces and the Ningxia Hui and Xinjiang Uygur autonomous regions. It boasts the most ancient, affluent, and largest musical system of all Chinese operas.

Relevant elements of nostalgic art are used in the practice of this research. The 3D animation created in practice is based on a story in Shaanxi, China, so local opera Qinqiang is added in the animation as a nostalgic point of music according to Shaanxi's local culture and customs. Shaanxi Qinqiang opera is a traditional folk opera in northwest China. Qinqiang is played by the erhu[5], the banhu[6], percussion, and other folk instruments. The singers tell stories of history and folk in different tones. Qinqiang opera is performed in various forms, with simple, rough, delicate, and profound performance skills, full of exaggeration and a vital breath of life. When I was a child, I often listened to my father and grandfather sing; such music can always arouse my memories and sense of nostalgia.

Nostalgia and emotion in animation

It was necessary to find out how nostalgia and emotion have been expressed through animation in order to apply some ideas from this analysis into my creative practice. As I learned from Sedikides et al (2008), "Nostalgia may facilitate the use of positive perceptions about the past to bolster a sense of continuity and meaning in one's life" (p. 306); and from Routledge et al (2013), "nostalgia positively affects psychological health by improving positive mood, increasing social connectedness, enhancing positive self-regard, and contributing to perceptions of meaning in life" (p. 812-813). Through analysing a selection of animation works with nostalgic themes, I have identified that nostalgia can bring positive effects to life; the good use of objects can bring good effects to nostalgia, at the same time it can promote the development of the story.

UP (Docter, 2009) uses both intangible and tangible elements as creative strategies to convey a sense of nostalgia. The intangible nostalgic element is a promise made by the main character to his wife, while the tangible nostalgia is the old house where the main character and his wife lived together. From *UP*, I learned that emotions after nostalgia can be diverse, such as loss, release, brave for new life; it made me realize the beauty of memories, but the adventures of life will continue. The storyline of *UP* is the main character Carl drives a flying house led by balloons and travels to Paradise Falls in South America, because of a promise that he made to his wife when they were kids. Russell, a little wilderness explorer, lands on the flying house by accident and joins in the adventure with Carl. The promise that Carl made to his wife and fragments of their life are the factors that trigger nostalgia. In addition to the story, the

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[5] The erhu (Chinese: 二胡; pinyin: èrhú; [aɻ˨˩xu˧˥]) is a two-stringed bowed musical instrument, more specifically a spike fiddle, which may also be called a Southern Fiddle, and is sometimes known in the Western world as the Chinese violin or a Chinese two-stringed.

[6] The *banhu* (板胡, pinyin: bǎnhú) is a Chinese traditional bowed string instrument in the huqin family of instruments. It is used primarily in northern China. *Ban* means a piece of wooden soundboard and *hu* is short for *huqin*.

lighting and texture/colour are also good design points in *UP*. Same scene, similar objects, but small changes of textures can make people feel that time goes by; for example, the same place of Carl's house, but with the wallpaper faded and some damage marks on the binoculars (Figure 3). In the plot, when Carl lands around the Paradise Falls, the change of lighting means the weather changes, the fog dissipates, and also means Carl walks out from difficulty (Figure 4). From cold to warm and dim to clear, the lighting changes indicate the changes of circumstance. I hope my animation is not purely negative and sad. I want to express the beauty of memories, the helplessness of loss, and the calmness and self-motivation that life has to continue; these emotions are what I feel when I miss home and family.

Figure 3: Texture comparison in *UP*.

Figure 4: Lighting comparison in *UP*.

From *La maison en petits cubes* (Dadash Musayev, 2012) I felt the loneliness from an old man. A smoking pipe is the medium that drives the story and memories in the animation. Using objects to express nostalgia or open memories is part of my research, which makes *La maison en petits cubes* an ideal animation reference for me. The city is spread by water, and as the water level slowly increases, people's houses can only be built up layer by layer like accumulated wood. This anime cleverly uses the concept of building blocks to express the main character's memory journey and life experience. The whole house is in the shape of a pyramid, and the old man dives down layer by layer to retrieve his favourite tobacco pipe that

fell into the water when he moved. Every floor is a memory of his partner and family. It starts out as a big family and ends up with an old, lonely man. The style of the animation looks concise, but there are many design details worth analysing. The animation starts with a photo wall, photos from different stages show information of the family relationship and also tell the story of the character (Figure 5). In Figure 6, light falls through the window, and the old man faces the photo wall with his back to the window. The photo wall is on the dark side, and the old man sits by the window on the bright side; it is a way to create a contrast between memory and reality by the use of lighting. The door to the downstairs is also the door of the old man's memory. In Figure 7, there is a strong colour contrast; before the old man opens the door, the image was warm, and after he opens the door, the surrounding becomes cold. In the end, the old man pours two glasses of wine but there is only him in the room; and he clinks with another wine glass by him alone (Figure 8). The design of the ending is unforgettable to me. Pouring wine for a non-existent person and clinking glasses with a non-existent person as if this person has been in the old man's world as usual and never left. Such ending design gave me mixed emotions; not forgetting the past, loneliness, loss and a feeling of accepting.

Figure 5: The photo wall. (*La Maison En Petits Cubes. Short Film*.

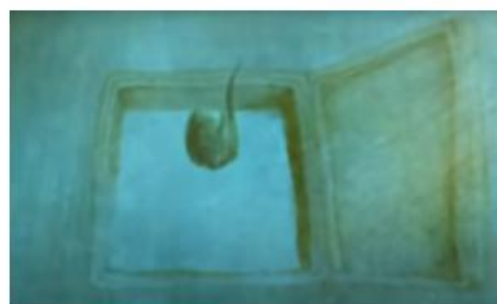Figure 6: The old man sits in his room *La Maison En Petits Cubes. Short Film*.

Figure 7: The door to downstairs. *La Maison En Petits Cubes Short Film*.

Figure 8: The ending *(*Dadash Musayev, 2012). *La Maison En Petits Cubes Short Film*.

Let's eat (Anamon Studios, 2021), uses a mother's homemade meals as nostalgic elements to tell the story of an unspoken translation of love into food. The short animation film touched me because the storyline is close to my life. The animation tells the story of a mother and daughter. The mother cooks meals for her daughter, and they take care of each other. When the daughter grows up to an adult, she gradually has her own ideas and is busy with her work, which leads to her estrangement from her mother. Finally, after she realizes that she missed her mother's birthday and needs to take care for her mother, her mother gets ill and passes away. When the woman has her own daughter, she realizes that was unspoken love and she expresses her love to her daughter with the same way (Figure 9). The analysis of this animation is based on its story content; I found a similar story theme with mine. People always don't cherish what they have, and only know how important it is when they lose it. *Let's Eat* takes the unspoken love from each of mother's recipes, while my animation focuses on drinking tea with grandfather. The same dishes, the same location, but the person has gone. At the end of the animation, the main character eats with her daughter just as her mother did with her. It explains that she learned how to love from the regret of her mother. One design that I really like is the ending part; there are some positive emotions while expressing sadness.

Figure 9: Screenshot from *Let's Eat* (Anamon Studios, 2021);
the main character with her mother, and the main character with her daughter.

Methodology

The methodology of this research is informed by autoethnography and practice-based research. Autoethnography is a research method that uses personal experience ("auto") to describe and interpret cultural texts ("graphy"), experiences, beliefs, and practices ("ethno") (Adams et al., 2017). People engage in rigorous self-reflection—typically referred to as "reflexivity"—in order to identify and interrogate the intersections between the self and social life. I was not sure about the main theme at the starting of the project. I wrote down things that appealed to me and analysed the reasons; for example, objects designed with Chinese elements by designers for other countries, Covid-19 and international students' daily lives. I did not realize that I was being inspired by experiences and cultures. An autoethnography "lets you use yourself to get to culture" (Pelias, 2003, p. 372) As an overseas student who has lived away from my hometown for a long time, I sometimes experienced homesickness, especially when I saw certain objects associated with my hometown culture or childhood. With these thoughts and feelings in mind, I conducted a keyword mapping exercise to discuss what I wanted to show and what feelings I wanted to share. The theme of my creative research came from my experience and self-reflection; this personal experience piqued my interest in the potential for things to produce emotional signals that result in nostalgia. Based on the key word of nostalgia, my aim was to explore the elements that triggered nostalgia in my experience through the process of the research, share my feelings and focus on storytelling. As a 3D modeller, in addition to sharing my story, I also shared that animation is a good method. The audience could know the development of the story intuitively, feel the power of 3D animation to visualize evocative elements and evoke nostalgia.

Practice-based research is an original investigation undertaken in order to gain new knowledge partly by means of practice and the outcomes of that practice (Candy, 2006). I needed to analyse the research through my experience; analysis and understanding of this research relies on the outcomes and process of digital art practice. A contextual review of literature and creative works guided the direction of the whole project and was also an essential method in the preparation stage. I collected and screened a large amount of knowledge and relevant information, and this content became the basis for the practice design and outcome analysis.

I used photography and sketching as creative methods in this research. I used photography as a method for visual research in order to find visual references for the animation. Photography is a way to enlighten my mind in the process of exploration. Shooting photos and short films is a process of recording inspiration, which was very helpful for me to collect resources. When I decided on the theme of nostalgia, my first inspiration was my hometown. I asked my family for help because I am far from my hometown. They sent some photos from my childhood, crafts, and hometown life. After photography, I used sketching to record ideas, explore characters and storyboard. Sketching is a transitional tool, but it really carries out my research more effectively. In my creative practice, all pieces of scenes and stories were organized together into a script by sketching. Sketching also helped me to transform my ideas into visually visible images. The process of drawing the whole storyboard made me think about the shots of the animation. I could successfully carry out the modelling and movement of the camera in animation for the rest steps because of the process of sketching.

Critical and reflective commentary on practice

Investigation/research and experimentation

Resource collection is essential in the early stages of creative research. In addition, in order to develop my own ideas, I also needed to look at well-regarded animation projects for inspiration. I looked for examples of animations[7] that varied in style and production but shared the same themes related to nostalgia. There are some good representations of nostalgia in these animation references, and good insights into the connection between reality and memories in animation. After watching these animations, I had a conception of my animation creation style and character design. I decided to create stylized characters but more details on objects and materials. For transition and other cinematic conventions, I needed to learn more about them to push forward memories and evoke nostalgia in my animation.

 Some photos of evocative old objects collected from my childhood and hometown gave me inspiration and guidance to design digital objects and environment (Figure 10). After seeing these photos, a strong feeling of homesickness rose in my mind; I realized that more elements of my hometown culture integrated into my works could create a better environment to evoke nostalgia. With my parents' help I got videos and captured audio clips of old people playing Qinqiang opera with the erhu/Banhu from my hometown, Shaanxi, China (Figure 11). These audio clips are sounds that can be used in animation creation as evocative sounds, as mentioned in the Contextual Review.

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[7] Great animation works analysis as discussed in the nostalgia and emotion in animation section of the contextual review

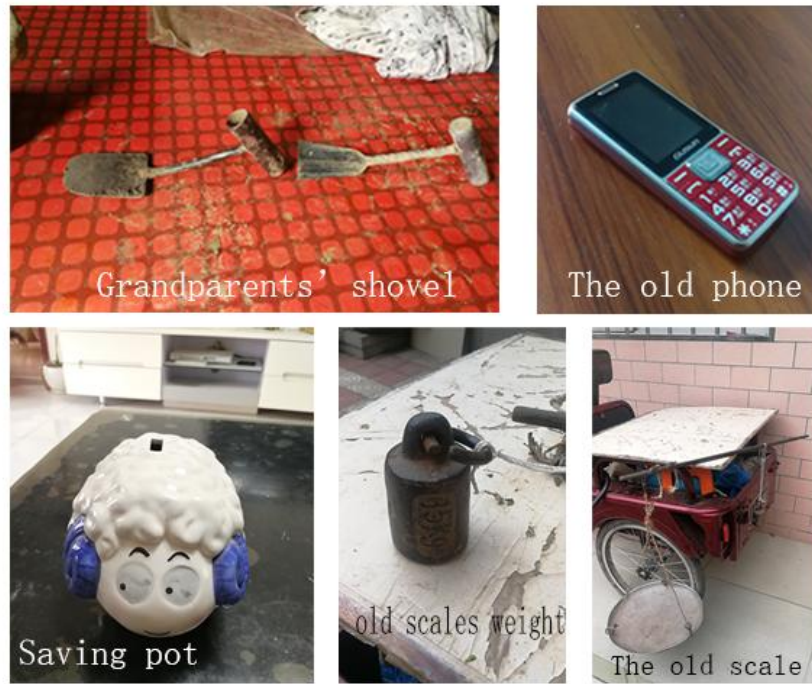Figure 10: Objects about my childhood and hometown, photos taken by my family

Figure 11: An old friend of my grandfather playing the banhu fiddle

I developed some story plots based on the photos I collected and pieces of memories. At this stage, I mostly used the method of sketching to innovate and record. By sifting through some sketches related to my hometown and family, I found that the central characters and events

that lead to my nostalgia were all about my grandpa. As a traditional Chinese family, elders are not good at expressing their love in words；kids are too young to find out and respond to the silent love till they grown up. It was a pity that grandpa passed away due to illness at the end of 2019; after my grandfather passed away, I would often dream of him. When I was a child, I had good times with my grandfather, and I felt sorry and regretful for not spending much time with him when I grew up, which made me feel guilty and deeply regretful. I listed some scenes or pictures related to my hometown and my relatives and drew some of the images that aroused my intense emotions. After the focus of the story's main characters and primary emotional lines had been identified, the next step was to develop the storyline with details. The story needed to express the mixed emotions as I experienced them, such as good memories, sadness, regret, and the feeling of acceptance.

Story Development

After an initial period of research, a whole storyline became the first task of this stage. I organized and expanded the memorable moments from my memories of my childhood, focusing on my relationship with my grandfather, then drew them into story plots. Through the guidance of the meeting with my supervisor on concatenating clips and story revision, I cut out parts of the plot with similar emotional expressions, simplifying the scenes that imagined good but difficult to achieve in practice parts. A revised storyline was added with a plot about a funeral, and this plot was placed at the beginning of the animation. This change not only brought it closer to my experience, but also made the audience understand the main reason for the sad emotion. Compared with simply displaying multiple happy events, the contrast between happy memories and sad reality can highlight emotional fluctuations. After the above changes, the theory of the story became a sad story of a girl, her dad, and her grandpa. The father and grandfather are not good at expressing their care for the family, and the girl does not understand the way of her grandfather and father because of her young age. When the girl grows up and understands, her grandfather dies of illness; the only thing left is memories.

From the first story script draft I found there were some problems about the transition scenes. Flash back is the connection point between the present and memories in the animation, and the flash back scene in my script was too rigid. In order to edit the script more smoothly and rationally, I discussed with my supervisors and learned about the basic structure of story/event development; the structure is beginning, development (turning point) and result. The

emotional line in my story describes the estrangement of a loved one and the situation of loving each other without expressing affection for each other. Therefore, the corresponding basic structure in my animation should be: conflict occurs, conflict intensifies, and conflict is resolved. Shifting from reality to memory requires emotional ups and downs, and the highest point of conflict is an excellent opportunity. For example, the sadness, loss, and grievance after a dispute between characters will prompt the protagonist to recall the past. Based on these tips, I put the flashback point after the argument and anger, and grievance made the character flash back. The specific medium was a tear; a teardrop into a cup of tea, and memories appear after the ripple fades. I connected my initial story segments into a whole script and created a story treatment[8]. To express my thoughts on the composition of the screen more intuitively, I decided to complete the storyboard as soon as possible.

Storyboarding and Character Development

All the stories are based on my experience; I, my father, and my grandfather are the prototypes for the girl, father, and grandfather in the story. I collected photos of my childhood, my grandpa, and my dad and then analysed the characteristics for character concept design (Figure 12). The little girl is naughty, the father is stricter and rigid, the grandpa is industrious and kind. After the basic character concept was completed, I used them in the storyboard.

Figure 12：Character inspiration

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[8] Story treatment version 1: see Appendix 1.

A complete and detailed character concept design is the basis for building a 3D model. After completing the storyboard, I needed to finalize the concept design of the characters (Figure 13). In this step, I needed to consider the detail of the characters and the result of converting it into a 3D model; for example, the model of the protagonist is divided into childhood and adulthood, and the two models need to have common characteristics so that the audience can understand the causal relationship in the storyline. These details will affect the shaping of the character's image and the audience's first impression of the character. Character hairstyles and costumes also needed to be adjusted to reduce the amount of work for the modelling and animating parts on a reasonable basis；so, I decided to modify and optimize the parts of the shoes and clothing patterns in the modelling stage to make every part of the character reasonable for modelling and animating.
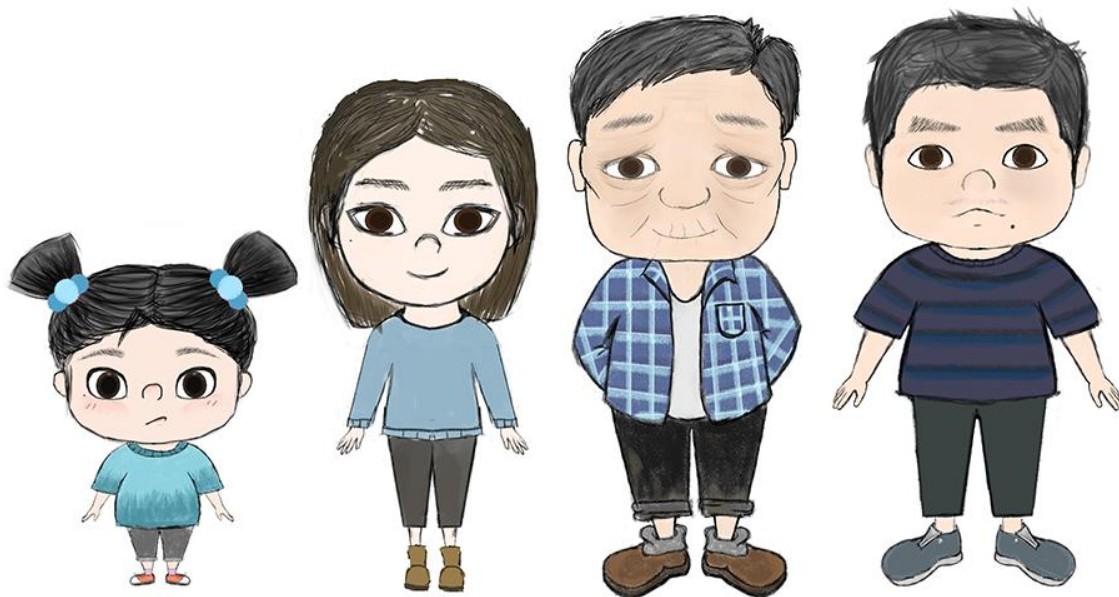

Figure 13: Character design concept

The process of making the storyboard inspired me to think a lot about animation production and how to refine plots. At this stage, a lot of creative inspiration and ideas appeared in my mind, but more ideas meant more difficulties and uncertainties. For example, the movement and angle of the camera; what dialogue and background music are appropriate? The main theme of my research is to express nostalgia with the plot and visual elements, plus I lacked experience writing lines and recording dialogues, so I decided to make the animation without dialogue.

Production/Animation

After the preparatory work, the 3D animation part started. The first step was to build 3D character models, required items, and environmental scenes based on the characters' conceptual design and storyboard. I divided the modelling work into two parts: one was character modelling, and the other was setting and assets modelling. The first character I started with was the little girl. The modelling software I mainly used were ZBrush and Autodesk Maya. I made preliminary model shaping in ZBrush and then imported the model into Maya for re-typology. Re-typology is re-routing the model mesh according to the character's body structure and muscle lines. After these steps, I had the first relatively complete character model (Figure 14). The 3D model and the concept map had a certain difference; for example, there was a small fringe on the forehead of the little girl in the character design of the little girl. Considering that the animation of the fringe could become extra work, I removed it during the modelling stage as mentioned in the character development section. In addition to building the character model, I also planned the scene model. I sorted several scenes according to their importance; the first scene I needed to make was the hometown.
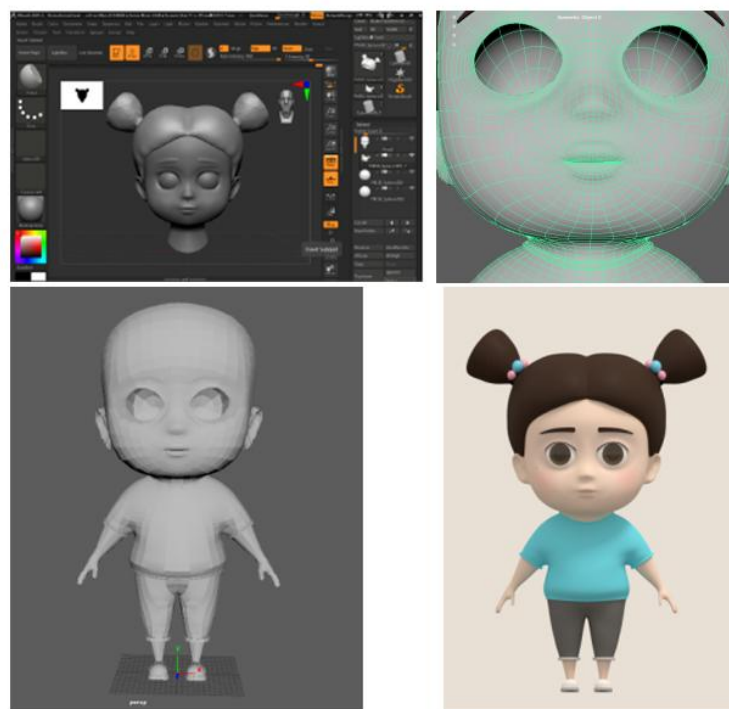

Figure 14: Character 3D modelling development

The character model could only be animated with a skeleton; the step after modelling was

rigging. My experience with rigging was limited to manual manipulation, so I decided to do each step manually for the first character rigging. This was a wrong decision because I didn't realize that this decision wasted a lot of my time, and it also delayed other tasks related to character animation later. The difficulty I encountered at this stage was mainly in the skin weight paint part. As my supervisor suggested, I learned about some plugins for rigging, which could improve the accuracy and efficiency of the rigging step: RapidRig: Modular, ngSkinTools, and the Tuna Facial Rig. These are rigging plugins for character rigging, model skin weight paint and character facial rigging. The advantage of a rigging plugin is that it contains basic ringing skeletons, such as the human body, reptiles, birds; just by adjusting the position of the joints, a suitable skeleton can be completed. I used them to complete the body rigging of the little girl character; I had heard of similar plugins before, but that was the first time I had used them, and it was a good experience.

I started the first animatic with only T-posed characters because character rigging and scene modelling were uncompleted. Each frame of animation costs time to render, the specific time depends on the complexity of the scene, the setting of material and the size of the texture; scenes and models were still far from the final design, so, spending much time on rendering was unnecessary at this stage. For a general check of the animation，I used playblast[9] to confirm whether all sizes of 3D models were appropriate and whether the timing and camera movement was the same as my plan. I found many problems with playblast; for example, one of the cameras passed through a wall and the speed of zoom in or zoom out was too fast to collect information from the image. I got some feedback from my supervisor and found I could work effectively by simplifying camera movement and focusing on important parts like hand movements or facial expressions rather than the whole body. This made me realize that I must think more about coordinating the camera and the character's position.

Due to the large amount of animation work my supervisor introduced an AUT student to me who needed to work 60 hours as an intern, and he became my assistant to help me with characters' rigging and some environment build; it was a win-win plan for both of us. I listed some uncompleted character rigging and modelling work and gave the list to my assistant. The 'little girl' model rigging was the first task we planned to start.

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[9] Playblast in Maya: A Playblast is a quick preview that lets you make a "sketch" of animation, providing a realistic idea of your final render result without requiring the time needed for a formal render.

The assistant completed rigging version 1 of the' little girl' fast, but after some quick checks, I found the model was difficult to be animated. We had a meeting to solve the problems, and I made a brief research introduction. For higher work efficiency, I gave feedback and pointed out the problems through screenshots (Figure 15). The main problems were on the character's spine and skin weight; for example, the spine was not twistable and the left leg's controllers affected the right leg. Version 1 of rigging was unsuccessful, and the main reason was lack of communication; I should have given my basic demands of the rigging and modelling scenes before he started work. For the environment scenes, my assistant needed to fill scenes up based on building models I made, such as trees on the street, cars on the road, and goods in the shops. The meeting was effective; version 2 of the 'little girl' rigging was better than version 1. There were still some skin weight problems, but they could be fixed with some adjustments. My assistant rigged version 1 through manual rigging, and version 2 used the rigging plugin. We tried rigging manually, but the result showed it was not an effective way for us.
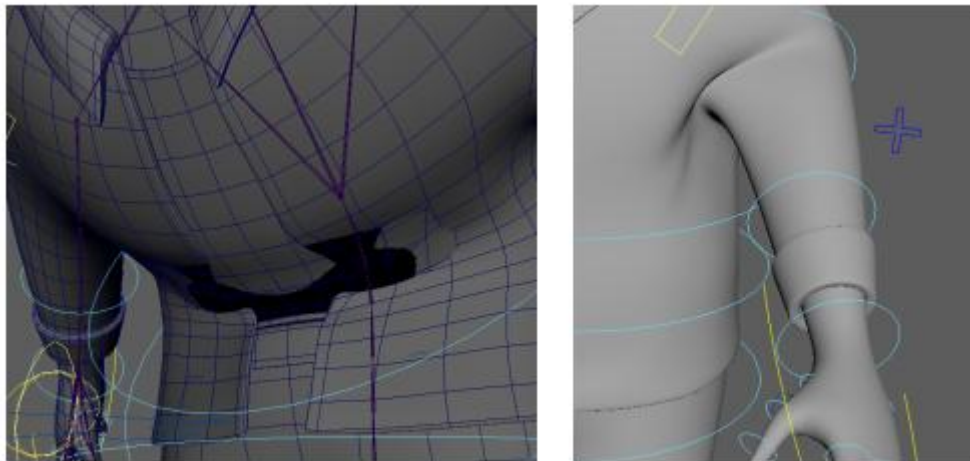

Figure 15: Problems of character rigging

I started my second animatic test after I had a few character models rigged. Following the order I set for the scenes, the first scene I needed to animate was the 'hometown' scene which is the funeral scene. The first plot is about the grown-up main character attending her grandfather's funeral. She gets into conflict with her introverted father during the funeral. The main character running through the gate was the first part of the animation (Figure 16); I needed to animate the whole body of the character because of the camera angle setting. Running animation is a cycle animation; I keyed the first turn and then set it to a cycle. I found some references about running positions and body movements, but the animated result

was discouraging. From the animation result, the character was slipping on the ground, and the swing of the upper body was unnatural. I had a meeting with my supervisor after I had some animation tests, and I got help and tips to refine my animation. Firstly, I needed to take a reference video and make the position and expressions of the main character of my animation match the camera angle I set in the animation. Second, I needed to use the graph editor to smooth the character movement; there were a lot of small unnatural movements that I could not find by just looking at it. The third was to zoom in the camera to hide unnecessary animation of characters and focus on characters' expressions; expression changes can lead audience's emotions and zoom in camera can reduce a large amount of animating work.
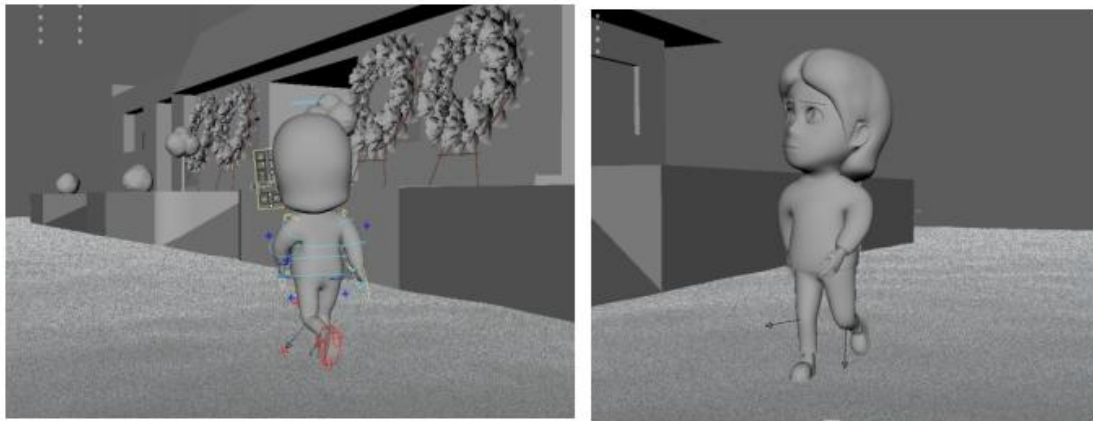

Figure 16: Running animation for animation, version 1

Animation re-design

Based on the meeting with my supervisors and their feedback, I decided to make some changes to the animation practice. Proper time management is an essential factor in completing the research. The multi-character and multi-scene are a huge amount of work, so, based on my level of proficiency in animation, this was already impossible for me to achieve. My supervisors came up with the very useful suggestion that the focus of the animation should be shifted from the character's story to the objects. This took me back to my original starting point; my inspiration comes from objects full of memories.

Following the new approach, I started re-designing the storyline and storyboard. My supervisor gave me a suggestion about using the first point of view to attend the funeral as a stranger, and to visit objects belonging to grandfather, telling the story between grandfather

and his family by visiting his room and objects; this way can make audience collect information through the image, and step into the mood. I supported the idea of changing the approach, but a few different ideas appeared in my mind: I decided to use the first view of the grown-up girl, and the animation ends in a third perspective, revealing the protagonist to the audience as a grown-up girl. The sudden revelation of a grandchild attending a grandparent's funeral changes the mood and brings clarity to this nostalgic journey. I considered what objects I should display in grandpa's room that could tell his story and his characteristics. The photo wall (Figure 5) from *La maison en petits cubes* (Kunio Kato, 2008) gave me some inspiration; photos record the past of a person, so I added some photos into the scene (Figure 17).
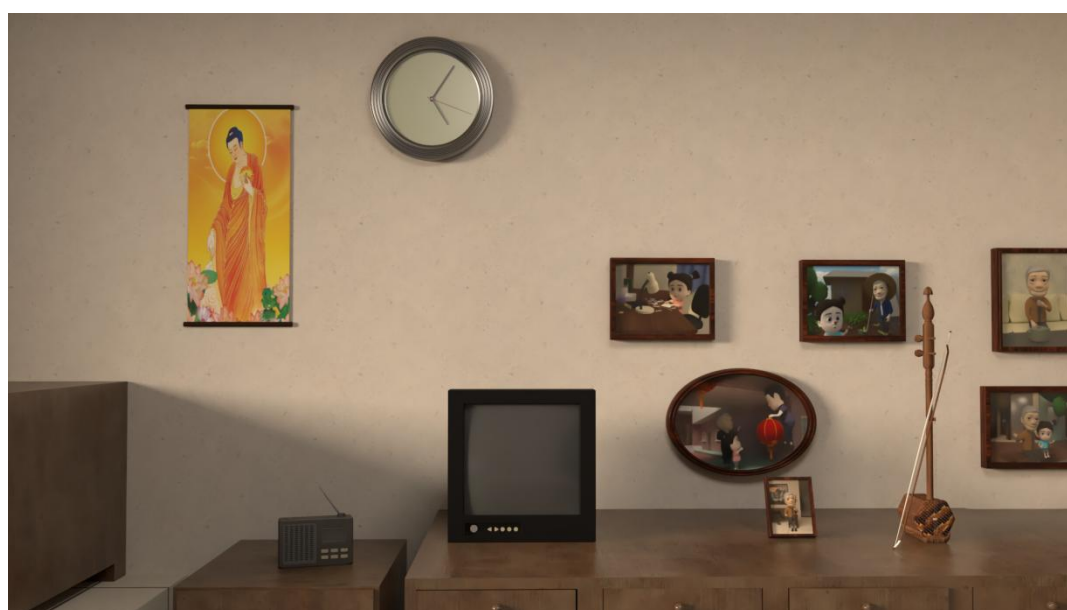

Figure 17: The photo wall in practice animation

Based on the above thinking, I wrote the story treatment version 2[10] and made the storyboard version 2[11]. I got feedback and references from my supervisors based on the storyboard version 2, and I found my problems were more about camera movement, scene transition, or connections. My storyboard looked more like a player exploring the world from the first point of view in a game world, which was messy and did not fit the animation theme. I simplified camera movement by learning and analysing short films and animations that the supervisors recommended. From these resources, I learned some skills about camera cutting and music coordination, which made me consider music and sound design in my animation. I learned the

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[10] Story treatment version 2: see Appendix 2.
[11] Storyboard version 2: see Appendix 3.

concept of diegetic and non-diegetic sounds in filmmaking. In my interpretation, diegetic sounds are the sounds made in the plot; non-diegetic sounds are more like film background music to lead the audience's moods. I wanted to use Qinqiang and some sounds of memories as diegetic sounds; it could push the story forward and help the audience understand the plot. Based on the new things I had learned, I refined storyboard version 2 to version 3[12]. In the storyboard version 3, I wrote short sentences to describe the lighting (Figure 18) and sound design in my mind. Version 3 made good progress and was approved by my supervisors, but after feedback, I made some final changes to the story's ending. In my opinion, the final version is better than the previous versions because: the camera movement is concise, the text explanation is helpful for readers to understand, the addition of lighting and audio make the plot progress more smoothly, the changes at the end make the ending of the story more reasonable. The ending of version 3 cut to the outside of the house, which made the ending lack emotion. At the end of the final version, there is an empty seat, grandpa's teacup and crutches are still there, but grandpa will never come back; compared with the happy photo in the cabinet, the emotions of sadness and longing are stronger (Figure 19). The photo in the cabinet also reveals that the memories are sealed (Figure 20). The final version ends with the character's complicated expression; as I hoped to express sadness, relief, and the feeling of acceptance through this ending.
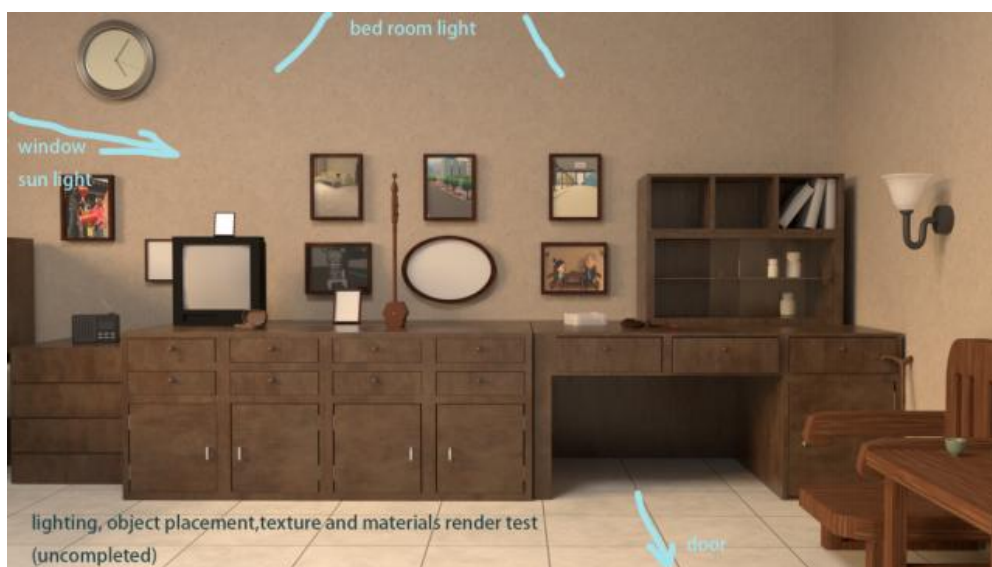

Figure 18: Lighting design

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[12] Storyboard version 3: see Appendix 4.

Figure 19: The empty seat

Figure 20: Old photo in cabinet.

Creating a character through objects requires consideration of the selection and detail of the object. An old radio, the musical instrument Erhu, and a tobacco pipe have been selected as main objects to display in the main scene (Figure 21). There were reasons for choosing them as main objects: the old radio and the Erhu show grandfather is passionate about his hobbies, and he used to smoke a lot. Showing both the good habits and the bad makes the creation of character more fully developed and realistic. Brown hued wooden, cloth, ceramic, and copper are materials of objects were used; as mentioned in the contextual review section, these elements get closer to nature, which is more likely to evoke the audience's feeling of nostalgia.

Figure 21: Main objects in grandfather's room.

I found some problems at the render stage. I had two versions of the render test, but none of them was a completed version. The reason for having multiple versions of render was I found some issues that needed to be fixed after every rendering. For the first version, the render setting was with light cache; the render speed was fast, but the problems were blur and lighting overexposure. The light cache can be used successfully for adding GI effects to animations, but there were only basic material effects I needed in my animation. To fix these problems I changed the render setting to brute force for render test version two. From the render result, the render speed became very slow, but the blur points had been fixed. Brute force is very accurate, especially if there are many small details in the scene. (Brute Force GI - V-Ray for 3ds Max - Chaos Help, n.d.)

The problems of render test version 2 was about render time; the length of rendering time is proportional to the quality of rendering. In my test, one frame of the main room took 20-30 minutes to render, which was at a threshold setting of 0.01. The effect was good but for an over 2000 frames animation it was not a good choice, because it may need over 40 days non-stop render time. Threshold is the setting for adjusting noise for an image, and it was hard to render the main scene with a lot of objects with details, reflection and refraction and the big size of the layered textures were below a threshold value of 0.01. My computer crashed a few

times when rendering some zoom in shots with details; it was a heavy duty for my equipment, and it may cause the entire render to fail. A meeting with my supervisor helped me: we found the effective setting after balancing image quality and render time. After render version 2 I also made some adjustments of textures, like brightness, contrast of colour and transparency and filled the background house with more models, like desks, shelves, beds and decorations. Compared with the first render test version, it was more natural and livelier. There were still some problems in version 2: noise. In addition to setting a low value on threshold, I learned that the denoiser could also help me to reduce the noise of the image; one is the denoiser element in the V-Ray render setting, the other one is the denoiser after render. The comparison results were obvious, the denoiser-processed image looked softer, especially on the reflection and refraction parts; but for some small material bumps, some texture details were lost (Figure 22). For a rendered sequence, such processing achieved the effect of reducing noise. After several render tests and setting adjustments, the image quality and animation finally met my requirements.

Figure 22: Grandfather's tobacco pipe from practice animation.

Comparison before and after denoising

Conclusion

The goal I set for this project was to explore the potential for the 3D design and modelling of digital assets to evoke a nostalgic reaction based on my experience and culture. The significance and application of nostalgia came home to me throughout the exploration; it is mainly divided into two aspects: one is about the understanding of nostalgia, and the other is about the application and expression of nostalgia in animation. I gradually found nostalgia brings positive effects beyond sadness from the research process; and I believe that the animation can effectively communicate feelings not only of regret, guilt and longing, but also relief and acceptance. The applications of nostalgia elements in animation are diverse, such as using objects to trigger nostalgia; for example, objects can be used as a means to guide the development of the entire story, and nostalgic objects can be used to unlock memories. Creating evocative items and material sets is a way to create a nostalgic atmosphere; changes and contrasts in colours, textures, and lighting also show the passage of time and moods changing for characters.

Autoethnography was an enlightening methodology in this research and helped me to find the direction and inspiration of the theme of story. At the early stages, the focus of the research was around the collection of objects about my hometown culture. The final theme and content of practice was developed further during the process of literature reading and animation viewing. There were some disadvantages in this process: the preparation and topic took a long time to finalise, but the final presentation and accuracy of the practice were dependent on the preparation stage.

After reflection, some advantages and regrets emerged throughout the research. There were some practice processes that were deficient: imprecise time management and inaccurate estimation of my animation skill were the main reasons that impacted the finished quality of the project. The animation story underwent several redesigns, as mentioned in the critical and reflective commentary on the practice section. The importance of sticking to the schedule was something I learned from this process. The advantages were on the investigation and story development part - clear thinking and flexibility to changes shown in these stages. I focused on objects, people and events, and worked with my family to collect relevant photos

from my list; in the animation re-design, these photos were still the source of inspiration and basis for my creation. Adhering to the design of the characters and objects based on prototypes can make the designed characters and objects closer to real life and achieve the purpose of making the story more vivid. The nostalgic items need to meet some characteristics found from the practice and research part, divided into external and internal factors. The external factor is that the item's appearance would conform to the characteristics of evocative materials, as mentioned in the contextual review. The internal factor is that the item is conducive to linking characters and events to shape characters; unique items appearing multiple times can also help the audience to remember the characters. Take the erhu musical instrument in the practical animation as an example: the erhu conforms to the evocative material and is also an imprint of the character image that can shape the role of grandfather. Playing the erhu was my grandfather's hobby; he was confident and devoted when playing the erhu, which made him more admirable in my heart, and it became an unforgettable image. These factors make the erhu a nostalgic symbol in my daily life. The item and the events may change because of different people, but the meaning and long-term emotional impact would make this item a nostalgic symbol. The animation production part applied the evocative elements summarized in the contextual review, while improving the viewing experience and also achieved a process of thinking, learning, using, and making. After this research experience, I have a deeper understanding of nostalgia. Nostalgia and nostalgic animations with personal themes may touch and mean more to the author than the other audience; the nostalgia shown in the research and results tends to be a process of inner emotional release and redemption.

There is potential for further research of 3D animation and assets that evoke nostalgia. There are some design points summarized and here, for example, the beginning of the story starts with a sad funeral, which can shock the audience and bring a sad atmosphere to the story. The nostalgic elements that lead the story are the focus of the contextual review section; they are evocative objects, materials and sounds. Items used in the story to create memories and nostalgia include photos, a radio, an erhu, a tobacco pipe, and tea sets; each item can help the story unfold. The most important thing is that these nostalgic elements shape the characters and also create a sense of loss, as implied through the contrast between the happy memory and the cruel reality; all the objects are still in the familiar room, but the person who owns them is gone.

I have several ideas for improving my animation "Bitter Tea". Both the model and the story need further polish, and the details in the animation are crucial to effectively conveying the story. In terms of model construction, the styles of buildings, plants, and items need to be unified. The textures of buildings and plants need to be closer to the same realistic style used for the main nostalgic objects. Traces of wear and tear (e.g.: cracked surfaces and broken edges) could make the model more realistic and personalised. As for the storyline, I plan to show the events in the character's flashback more specifically. In the animation production, I chose photos and sounds to display some pieces of memory. While not showing the protagonist, this method still enables the audience to understand what happened, highlights the relationships between characters, and maintains the structure of the story. Considering these advantages, using the photo wall is an effective and straightforward way to communicate narrative and relationship contexts. When updating the animation, I would still choose to use photos to display memories, but add new ideas based on it. The new design idea could be the photo on the wall whereby the static photo becomes a short animation and shows the flashback content when the camera focuses on it. These flashback events can involve when the grandpa picks up the little girl from school, when the grandpa takes care of the little girl, and some moments of daily life they experienced together; these images could enrich the emotions between the characters. Event details in flashbacks between characters can help the audience to understand the reasons for the nostalgia later in the animation.

Using photos as a nostalgic method is intuitive but relatively common and lacks innovation and depth. When considering any major changes to the animation, I would choose additional methods that are more innovative. I found several natural and creative ways to convey memories after viewing further animation reference. These ways connect memories and reality through some objects as a medium, such as water surfaces, diaries, mirrors, and reflections; combining these objects with camera movements (like zooming-in) could create the sense that a memory is being accessed. For instance, in *La maison en petits cubes*, the protagonist enters the water to find a tobacco pipe that had previously been dropped. When the protagonist dives and picks up the tobacco pipe, the image changes to his wife picking up the pipe for him, which triggers a flashback. The protagonist pauses while browsing the old items in the water, which is followed by a series of memory images related to his family. Another example is the CG animated short film *Umbrella* (Hilario & Pece, 2021) in which the main character sheds tears when he remembers the past. As he cries, a tear drops onto a piece of paper on the floor. The teardrops become a wet stain, and inside the stain is the image of his memory: the camera zooms into the stain and leads the audience into the memories. For

the characters in my animation, I would like to pay more attention to their expressions. The character expressions in my animation are relatively simple and lack subtle cues to highlight emotional changes. For this part, detailed facial rigging is essential, such as the eye corners, eyelids, and the naso-labial region. Using live-action performance as reference could guide the characters' movements and expressions to become more natural and physically informed. Using subtle expressions to communicate emotions would help to better convey the story narrative. As a whole, these strategies would improve my animation, and it can be the focus of my future study and work.

After the whole exploration, I found advantages of using 3D animation in this research. First, it can integrate a variety of evocative elements, adjust the style according to the designer's needs, and has the flexibility for the character and environment creation and material settings. Second, issues that needed to be fixed at each stage in animation production were easily identified. But, there are still some limitations; for example, animation provides visual context, but lacks other sensory experiences such as touch and smell. In the Contextual Review section, there is an analysis of the history of nostalgia, different forms of nostalgic elements and applications of nostalgic elements. In the practice part, creating memorable objects and scenes to trigger nostalgia is not limited to specific events, and leaves the audience room to associate it with their own experience. In this project, I combined nostalgia and 3D animation to explore self-directed nostalgia, record memories, and share emotions based on personal experiences.

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Appendices

Appendix 1: Animation treatment version1

| **Bitter tea**

(Airplanes fly over the sky)

The funeral scene, accompanied by a heavy atmosphere of the girl, stepped into the house. The girl reached out to touch the table in front of the hall, and she looked at the coffin behind the screen and the picture of her grandfather on the table. In the room, the father handed the girl a cup of tea. The girl took the cup and looked at the floating leaves inside. Tears rolled down her cheeks and made small ripples as they fell into the cup. As the ripples spread and faded, the girl's reflection in the cup became what she looked like when she was a child（the little girl）.

Besides the adobe house at the edge of the field, the little girl is playing alone. In the far-field, grandpa with a hat bow back in hard work. Grandpa stopped what he was doing to relax and looked up at the hot sun, sweat running down his face. There is a radio playing Qinqiang opera[1] on the ground. Under the shade of a persimmon tree next to the adobe house, the girl pokes (or plays with) passing bugs with its branches, a glass bottle filled with tea on a small wooden bench beside her. (Little girl didn't care about her grandpa)

(Glass glass from the last scene) Grandpa is holding a glass cup full of tea and waiting by the roadside, occasionally looking into the distance. As a school bus rolled up, grandpa smiled. The door opened, and the little girl hopped out. The little girl handed her bag to her grandfather; grandpa passed the little girl a glass of tea. The little girl unscrewed the cap, took a sip of tea, frowned, shoved the cup back into her grandfather's hand, and happily ran away without looking back. Grandpa in the back carrying a bag with the bottle looking at the far granddaughter raised hands (indicating the little girl to run slowly), but the little girl's figure is still far away. (The camera follows the back of the jumping and running little girl, the back view gradually blurred into the back of the grown-up girl dragging her luggage towards the gate of the international airport.

The girl's back went to the airport gate to look back and saw the scene of a little girl sitting in the room to write homework. The little girl looked from her room at her father sitting on the sofa in the living room, where he was watching TV and drinking tea without responding. The house was tranquil except for the clock and the faint sound of the television. In front of the coffee table, the father pours the tea and gives the little girl a cup of tea. (The children's laughter comes from outside the window), the father is chattering (drinking tea with one hand and waving in the air with the other). The little girl took a sip of her tea; the bitter tea made her frown and stuck out her tongue. The little girl was absent-minded, listened to not go in father's words kept looking out of the window. The little girl reached out and put the cup on the table, and pushed it away. (Children's playfulness and dad's chatter grow louder)

(Suddenly quiet, back to reality the little girl becomes a girl) The girl puts the cup back on the table with an Embarrassed smile, pushes away the cup, and tries to escape the eye contact. Dad pushed over a small cup of sugar, took one, and put it in the girl's teacup. Then he slowly picked up his teacup and drank it with squinted eyes. The girl's expression was mixed with dull and some surprise. The girl thought her father was not looking at her, so she took two more sugar cubes from the cup quickly and put them into her cup. Then she took a sip and smiled and breathed a sigh of relief. The girl smiled and looked carefully at her father, who gently turned his head and faced the window with hiding his smile. Grandpa's old radio sits on the windowsill, birds singing outside the window, and the light inside the room is soft (the background music is birds singing and a short Qinqiang opera).

Figure 23: Animation treatment version1

Appendix 2: Animation treatment version2

Treatment

A plane flew past in the sky (probably in the afternoon). The title appears, and music plays in the background.
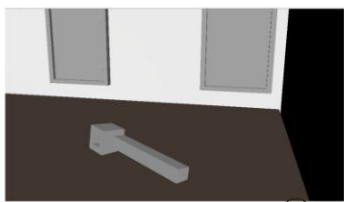
A house with wreaths appears in the main character's view (the first view of a grown-up girl), and she looks around slightly. The main character enters the courtyard from the main gate and looks straight at the living room door (ready to enter the funeral). After entering the living room door, the main character looks around slightly and then focuses on the funeral hall table. She stares at the table and then focuses on the black and white photo of grandpa on the table. She looks up gently at the coffin behind the translucent curtain. The image goes black (the girl closes her eyes) and lasts seconds. The main character stands in front of a half-concealed door. She gently pushes the door with one hand and walks into (grandpa's bedroom). The mid-afternoon sun penetrated through the Windows. There are some pictures on the wall, which were basically in chronological order. These are pictures of grandpa, little girl, and father. The main character stays for a while in front of these photos: the photo of the little girl helping her father and her grandfather hang lanterns during the Spring Festival, the photo of the little girl and her grandfather in the field, the photo of the grandfather picking up the little girl from a school bus after school, the photo of the grandfather and the girl hugging in front of the international airport gate, the photo of the grandfather and the father sitting together enjoying a cup of tea. The main's eyes move slowly to a nearby cabinet where her grandfather's belongings are kept. These items include a Tobacco pipe, an erhu (traditional Chinese musical instrument), and an old radio. The main character looks at the pipe, and small sounds of smoking, exhaling and coughing can be heard in the background. The main character shakes her head slightly. The main character looks to the left, and an erhu appears in the picture. Beside the erhu is a picture of grandpa sitting and playing the erhu. The main character's view stops on the erhu, looks up and down, then hesitates and looks aside. Then the main character sees an old radio, looks at it for a moment, reaches out her hand, and presses the' Play ' button.

The whole house is in the evening sunlight when the camera cuts to the exterior. The pure music of Qinqiang opera (a traditional Chinese opera) plays by the erhu slowly plays in the background. The scene returns to grandpa's room, a view of look out of the window (the sound of pouring tea appears in the background music). The main character sits on a chair, and she slowly browses grandpa's room(first point of view). The main character looks to a small tea table next to her. There are two tea cups on the table, one containing tea and one empty. The camera cuts to the third point of view, showing the grown-up girl raising a cup of tea on a chair in her grandfather's room in the sunset light.
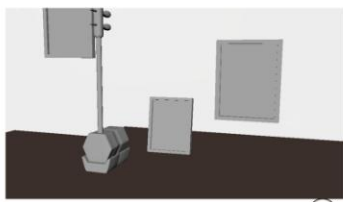
Figure 24: Animation treatment version 2

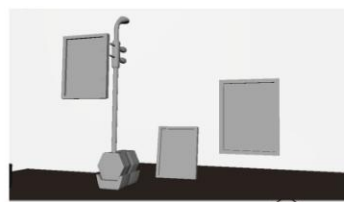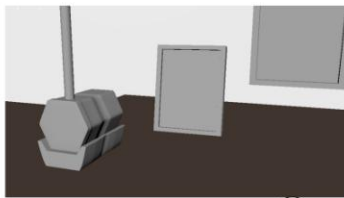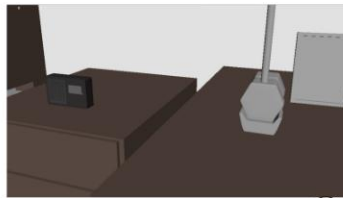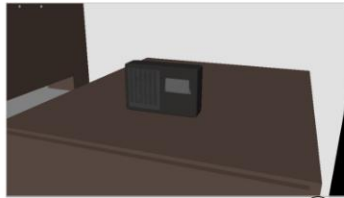# Appendix 3: Storyboard version2

3
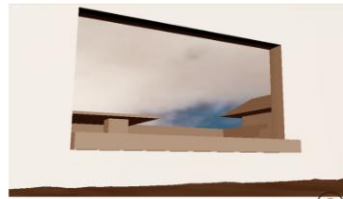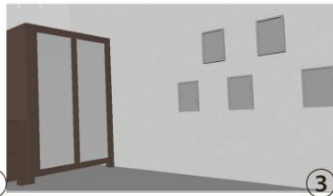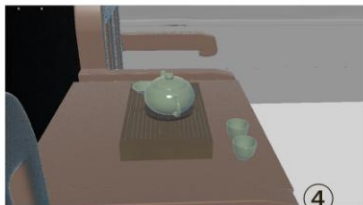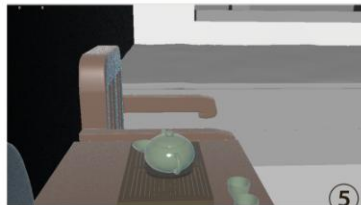
4

Appendix 4: Storyboard version3

A plane flew across the sky (the sound of a plane flyby)

①

The title appear and soft/sad BGM into.

Bitter Tea

②

The title fades out and the camera pans down and the house appears, staying for a few seconds

③

cut to the entry of funeral

4

cut to the table and photo, zoom in, focus on the photo

5

A small sound of Qinqiang music comes from the room, camera pan up .

6

Follow the music, camera cut to the front of the room

7

The light gets warmer and the environment gets colorful

8

9

zoom in to the old radio
The music of Qinqiang becomes louder

10

camera cut

11

Erhu and grandpa plays the erhu photo

12

camera pan right

13

camera focus on tobacco pipe,
BGM:opera music, a man smoking, puffing, a slight cough

14

pan up and stop at the photo, and zoom in.

15

small sounds of the laughter of kid and old man

16

camera zoom in, all background music fades out

17

cut to tea set
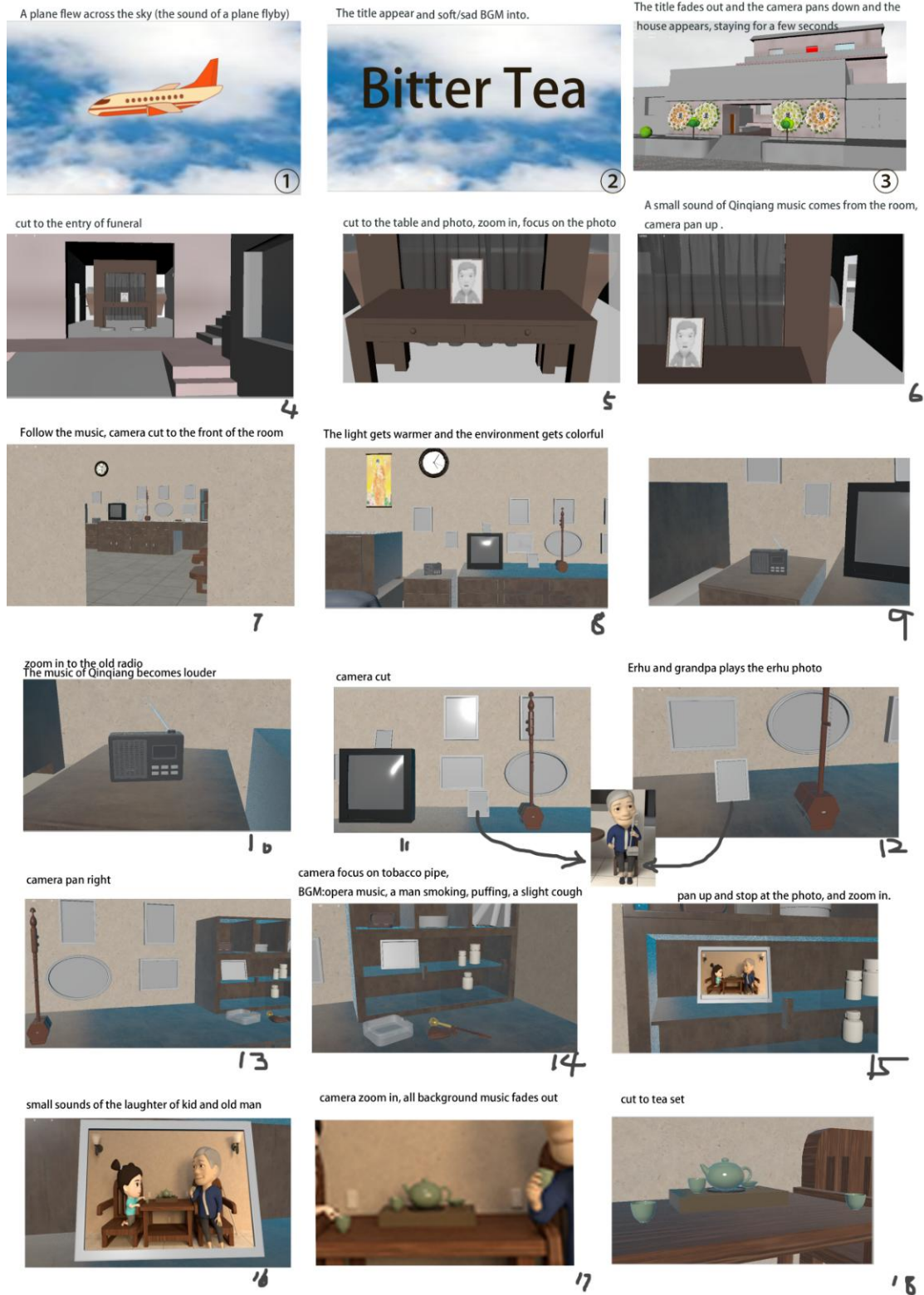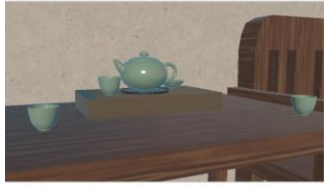
18

keep for few seconds.BGM: clocks

19

zoom out and soft background music drifted in

20

lighting: sunset, warm, low brightness

21

22

(The end,the house under the sunset, not sure.)   Maybe pic21 would be a better ending?