December 23, 2016: Clark’s comments

Kristin

Your paper is near excellent. You have some minor issues to address.

All Figures need to be mentioned **at least once** in their numerical order in the main text file. Put (Figure X) or Figures X-X) at the end of relevant sentence but before the period.

Several of your citations are incomplete. I suggest putting the title of the article or book chapter in quotes and searching for full citation information on Google (publisher and place of publishing, missing page numbers, etc.). You may not find all of them but do the best that you can. Also, put periods after each Figure Caption.

Add “c” to the names of the revised files.

You will get an “A” for the Final Paper.

Clark

Kristin Chow

ANTH 258/CIS 106

Visualizing the Past/Peopling the Past

Final Project

21 December 2016

Saving Culture from Tourism with Digital Media

Virtual reality is a currently expanding field with seemingly unlimited potential. With VR, we can travel to distant lands without the inconvenience that comes with travel and imagine worlds that no longer exist. Visuals can tell a lot more than words can and so virtual reality facilitates social and cultural learning through “a travel experience rather than just travel information” (Champion 2011:9). VR is a platform for a novel way of learning that creates accessibility and accomplishes things that are impossible with conventional ways of learning. Erik Champion explains how tourist sites are ironically threatened by tourism itself:

Tourism can destroy the local industry, and erode local culture. Businesses that have served the local populace for generations may have to move out of town because they are not believably ‘authentic’ or suitably ‘historic’ enough to be included in packaged tours. Tourism can even transform the urban fabric: the inner city may become crowded in summer and desolate in winter. ‘Experiences’ and ‘artifacts’ can be introduced that are actually not local at all; they just appear to be, and are easily placed in shopping bags and placed on mantelpieces. (Champion 6)

A historical river town in Shanghai, China faces this exact threat. Zhujiajiao is packed with tourists who navigate and crowd the town daily. Tourist crowds populating and commercializing the space disrupt the travel experience and threaten the cultural integrity of the town. One solution to this problem could be virtual reality, which can provide a rich experience and replace the need for tourists to physically visit the site. Perhaps the VR experience could provide an even richer experience than actually visiting the site. Virtual reality can be used to reconstruct a site as it existed in past time periods; it can undo all the changes that the rise of tourism brought about and recreate a lost culture.

We set out to reconstruct Zhujiajiao as it existed in the 1900s, before tourism swept through and forever changed it. We will use Maya to model a part of the town and Motion Capture to populate the town with people so as to best set the scene. Particularly, we will model the part of the town around the Huimin Bridge and have our people walk, row boats along the river, and create calligraphy.

Zhujiajiao as Cultural Heritage

Zhujiajiao once existed in the “water country” on the bank of Lake Dianshan. Founded during the Qing dynasty, Zhujiajiao “reached its prime as a bustling market in the 1930s” (Knapp 2012). The main reason for the town’s success and economic boom was the rice industry. Rice was transported from surround farms through the extensive network of canals to be processed at around 70 rice shops in town (Knapp 2012). Originally the town covered 2.7 square kilometers and was home to 36 bridges. These bridges each harbor great cultural value and history. The Fangsheng Bridge, the most celebrated, was built in 1571 under the command of a monk from the Cimen Temple. Traditions formed around this bridge: at the foot of the bridge existed a pool where devotees would come to set fish and other animals free. This “noble purpose” gained the Fangsheng Bridge cultural prominence within the community (Knapp 2012). Another well-known bridge is the Huimin (Benefit the People) Bridge, which was reconstructed in 1996. It is the only remaining bridge of its design and material (wood). This is the bridge we focus on in our project. Unfortunately, we chose to model the Huimin Bridge before we discovered the cultural importance of the Fangsheng Bridge. Today, Zhujiajiao is a World Heritage site—though, only 20 bridges remain and the water town and has been absorbed by the suburbs of modern Shanghai.

Today, the town advertises preservation of the town’s architecture from the era of its foundation and proudly proclaims itself an artifact of the past. A problem presents, however—one cannot ascertain the extent of true preservation of the town, as records of the past are not accessible to the public. Reliable studies on Zhujiajiao’s past exist on Chinese databases that one must pay to access. Other information on the town’s culture and renovations can only be obtained by visiting the town and its museums—snippets of this information exist on travel websites and traveler’s blogs. In the past few decades, Zhujiajiao has gone through drastic changes and now modernism threatens its culture and integrity. The desire to capitalize on its historic beauty has overtaken the town. As original homes are replaced with shops, real estate firms take hold of property, and daily boat tours take over the waterways, the traditional culture of the town is gradually becoming forgotten.

We gather evidence of the town’s desire to attract tourists from images of the town on travellers’ blogs. Some of the evidence is as follows. A chain fast food, KFC, has plastered its name over a building at the entrance of the town. A Starbucks proudly stamps its name and logo over a building next to many shops along a main street. By the Huimin Bridge, a chain café “illy” has set up shop. On the other side of the bridge, a balcony with tables and striped decorations has replaced a traditional building’s structure and windows, which seems to have been converted into a restaurant. Commercialism has invaded even places with so much cultural importance and is constantly expanding as locals give up their homes to be used for commercial enterprises. Change is a constant in this town and construction, a common sight. To imagine the village as it once was, one must travel away from the main streets through the alleyways and to the residences to find people living as they may have before. Authenticity, ironically, is far from that.

Modeling Zhujiajiao

Drawing upon Champion’s thoughts on the value of virtual reality in cultural heritage, we will perhaps educate people and provide a visualization of the town in its past context, before tourists and Starbucks filled the streets. We will replace the modern institutions with the period accurate market-style village that once thrived with sellers, villagers, and craftsmen around the 1930s, during its economic boom. Due to time constraints and limited skills, we modeled only a small section of Zhujiajiao and simulated the town in the context of its past culture as it is remembered today with the software program Maya. We focused on the Huimin Bridge, the only currently standing wooden bridge in the town. As we are trying to recreate a scene in Zhujiajiao from 86 years ago, we use Motion Capture to populate our town because the people are more important than the architecture of the town. Instead of crowds of wide-eyed tourists, the people in our model will be local inhabitants doing daily activities. The activities we captured are as follows. The first was simply a walking motion so we could have people crossing bridges or walking along streets or marketplaces. The motion may be simple but it is important in recreating the bustle of the town. The second activity was a rowing motion. We modeled the boats, not as they exist now as guide boats for tourists, but after boats depicted during the Qing dynasty. My partner expands upon this further. The last motion is a person creating calligraphy. If we had more time, we would have captured more activities, perhaps of merchants selling their products and locals buying them. However, with what we have now, we do our best to visualize the social context of Zhujiajiao.

My contribution to this project is 3D modeling the Huimin Bridge and the adjacent architecture as it may have appeared before its reconstruction in 1996 in Maya. I began by collecting photographs of the bridge from the past couple decades, but was unable to find relevant depictions of it from past eras. Though I could not find measurements and architectural plans of the Huimin Bridge, I found measurements of the Fangsheng Bridge. I used these measurements to approximate the measurements of the Huimin Bridge. While the approximation is highly inaccurate, I used the resources that I had. To compensate for the lack of photographs, I searched for other typical architecture from the Qing dynasty and found photographs of bridges with similar architecture. For one thing, the Huimin Bridge is “the only covered timber frame corridor span in Zhujiajiao” (Knapp 2012). This means that the bridge is constructed from beams of wood and is covered with a roof creating a corridor. Looking at bridge architecture from the Qing Dynasty in *Buildings of Qing Dynasty*, I discovered a photo of the same kind of bridge. The roofs are tiled in the same way and the roof support beams are spaced out about the same as well. They also both have supporting beams under the bridges that dip into the water. While I cannot model the bridge’s past design before reconstruction, its resemblance to other Qing dynasty architecture confirms that its design must have been preserved in some way and is not completely novel.

To begin modeling the bridge, I first built the supporting beams and the platform out of rectangular prisms. I then extruded both sides of the platform outwards and angled them downwards to give the general structure of the stairs. Next, I cut faces into the platform and extruded supporting beams upwards from the platform to hold up the roof. I cut faces on the roof support beams and extruded those to create the railings. I ran into some issues here with aligning them perfectly while being able to slant them downwards above the stairs. At this point, I had modeled the general structure of the bridge. I had minimal knowledge of how to use the Maya software having been learned to creating basic forms and use a tiny fraction of the tools that Maya offers. However, up to now, this knowledge was enough. Modeling the stairs was incredibly challenging, but I learned a lot from them. The first challenge was figuring out how to turn a slanted surface into perpendicular steps. My first instinct was to cut the surface into multiple rectangles and extrude each of them downwards at different depths. This created slanted steps and so I rotated the surfaces to be perpendicular. This created many more problems for me later I found as it did not create perfect steps and extra surfaces popped up out of nowhere. Eventually, I managed to resolve those issues and was left with the issue of filling in the gaps at the sides of the stairs. I tried many different techniques and it took a very long time before I discovered that I could bridge one edge of the stairs with the lower slanted edge (which still left gaps), cut the edge up, and merge each vertex with every vertex on the steps. To finish the bridge up, I had to add in the supports between the railings. Though there were various methods I could have chosen, I did this by duplicating cylinders and placing them as they appeared in pictures of the bridge. I then modeled the roof as a separate object, so that it could have a different texture than the wooden bridge. Now that I had my model, the next step was to texture it. I found a wooden texture for the beams and corridor of the bridge and have yet to figure out how to texture the roof with a stone tile. The process of creating the bridge took over twenty hours to complete because it was so complex and because I went through many trials in finding a method that would work to achieve what I wanted.

After modeling the bridge, I moved on to the surrounding context. At the moment, I have only created the streets that rise up perpendicular to the river, the stairs that connect the streets to the bridge, and the fencing along the edge of the streets. To create the streets, I started with a rectangular prism and sectioned it off so I could curve it (not perfectly rounded, still very angular). Creating the stairs still took a lot of time to do, but I was able to complete them efficiently. For the fencing, I cut many squares into the street platform’s face and extruded them all upwards to be identical. In hindsight, I should have created one fence post and duplicated it to be more efficient.

Conclusions and Future Directions

I am pleased with the modeling that closely resembles typical bridge architecture from the Qing Dynasty. Of course, we still have a long way to go in accomplishing our goals. I must also recreate in the buildings and streets a scene from a past era. We will create rivers and fill them with people using boats for transport instead of for tours. We will model buildings in their older architecture and remove commercial businesses from the scene. Most importantly, we must fill the space with people living and running the town as a period relevant place of residence and marketplace. If we had more time and resources, we might even model the Fangsheng Bridge and the marketplaces that ran alongside it. We could create more elaborate animations of people selling produce, people browsing the marketplace, and so much more. Ideally, to recreate cultural heritage, we could even animate the setting the fish free ritual by the bridge. If we could accomplish all of that, Zhujiajiao would live once again.

Virtual reality could help not only Zhujiajiao, but also so many other cultural heritage sites. Many sites have been affected by tourism so much that they have in fact lost their cultural integrity. Virtual reality can help extend the reach of the knowledge these sites have to offer, educating and providing rich experiences for people all around the world; perhaps, it can lessen the impact of tourism on these sites and help reestablish livability and culture.

References Cited

Knapp, Ronald G.

2012 Chinese Bridges: Living Architecture From China’s Past. Tuttle Publishing.

Champion, Erik

2010 Playing With the Past. Springer-Verlag, London.

Buildings of Qing Dynasty

Paths International Books from China. China Architecture and Building Press.

Zhujiajiao Shanghai

2003 Shanghai: Shanghai gu ji chu ban she

Lawrence, Jeanne.

2013 A Day in the Ancient Water Town of Zhujiajiao. *Shanghai Social Diary*

Visiting Zhujiajiao, Xintiandi, and Tongchuan Lu

2014 The Travels of Four Couch Potatoes