University of Massachusetts Amherst

ScholarWorks@UMass Amherst

November 2023

Zal and Simorgh from Shahnameh (Book of Kings) a Design and Fabrication Film Project in Stop Motion Puppetry

Maryam Taghizadeh Hemayati

ZAL AND SIMORGH FROM SHAHNAMEH (BOOK OF KINGS)

A DESIGN AND FABRICATION FILM PROJECT IN STOP MOTION PUPPETRY

A Thesis Presented by

Maryam Taghizadeh Hemayati

Submitted to the Graduate School of the University of Massachusetts Amherst in partial
fulfillment of the requirements for the degree of

MASTER OF FINE ARTS

September 2023

Theater

"ZAL AND SIMORGH" FROM SHAHNAMEH (BOOK OF KINGS)

A DESIGN AND FABRICATION FILM PROJECT IN STOP MOTION PUPPETRY

A Thesis Presented by

Maryam Taghizadeh Hemayati

Approved as to style and content by:

_____

Michael Cottom, Chair

_____

Harley Erdman, Member

_____

Chris Baker, Member

_____

Chris Baker, Department Head

Theater Department

DEDICATION

To my parents and my brother who always support and encourage me and for their love

To my cousin who will be always in my heart

To the people of Iran who are fighting for their rights, especially women whose bravery

lightens our future

To young people of my country who sacrifice their lives to bring us freedom and a better

future

Women, life, freedom

ACKNOWLEDGMENTS

ABSTRACT

ZAL AND SIMORGH FROM SHAHNAMEH (BOOK OF KINGS)
A DESIGN AND FABRICATION FILM PROJECT IN STOP MOTION PUPPETRY

SEPTEMBER 2023

MARYAM TAGHIZADEH HEMAYATI, B.S., PAYAM E NOOR UNIVERSITY,
ARCHITECTURAL ENGINEERING

M.F.A., UNIVERSITY OF MASSACHUSETTS AMHERST

This thesis is a reflection of the design, fabrication, and production of the Zal and

Simorgh story in *Shahnameh* in puppet and stop motion. It is an original performance

piece of my concept, design, and fabrication and it was presented to the public in August

2023.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Project Description

My MFA Thesis Project in Theater Scene Design & Technology is entitled, "Zal and Simorgh" from *Shahnameh* (book of kings by Ferdowsi). This thesis production is an original performance piece of my concept, design, and fabrication and presented to the public with puppets via stop motion videography. The first video performance was presented formally online on April 27, 2021, to an invited audience. Subsequently, the finished work is to be posted online on August 11, 2023 for sharing across the globe. This posted project includes the final presentation, plus a documentary pre-production work, intricate planning, scheduling, budgeting, and creating of the artistic and technical design, from concept through fabrication.

Communicating this story with the puppets is directly influenced by "*Kheime shab bazi*" (Iranian traditional marionette theatre) and shadow play found in old Iranian history. I chose the story of Zal from *Shahnameh*. It is an epic poem of Persian kings written by the Persian poet Ferdowsi.

This is a fully realized production from concept to completion, with a scope comparable to many full-scale theatrical productions. The presentation includes 38 costumed puppets and 14 unique scenes. Much of the work was done by hand, and the "behind-the-scenes" process was thoroughly documented in the accompanying short film. Filming in stop motion means for every 10 seconds of finished work there are 300 or more synchronous photos to be subsequently edited and formatted.

<u>Documentation</u>

Another part of my project was making documentation of the whole process of it.

My documentary film and in-depth written documentation of this project involving

different aspects of art and technology (puppet, stop motion videography, scene design)

provided a standard from which UMass students can learn in their future goals of creative

storytelling. I showed how I was using all the skills, knowledge, and techniques I've

learned from UMass through my scenic design mentors and colleagues. The entire

project, both the presentation and the supplementary documentary, will provide great

resources for students in UMass theater, art, and digital art. The story also opens the door

for anyone interested in learning about Iranian art and culture.

<u>Artistic Merit of Proposal</u>

For my project, I chose a story from *Shahnameh* and used puppetry and stop motion

videography to tell my story and share it online for a couple of reasons:

First, the pandemic has changed the ways of our lives, and it has altered the

methods of presenting art, especially live events. The online platform was a solution for

theater and live events at that time.

Although an online event does not have the same quality as a live event, it increases the

size of potential audiences. Also, anybody can watch the production from any part of the

world. This way I will be able to share my story with a much larger audience around the

globe.

Second, I am from Iran, rich in culture, art, and literature. I chose a piece of literature from my country because it is a great opportunity to share my culture with others, especially here in the U.S. where people are not often familiar with Persian literature and art. I was extremely passionate to create and share a small part of my country's art and literature with American audiences. *Shahnameh* (book of kings) is the essence of Iranian nationhood; It preserved the Persian language, history, and culture. It is also a secular body of myth and legend with amazing storytelling. My hope is this story will be seen as a great source of inspiration for artists.

Third, as a designer and storyteller, my original idea was to have a puppetry project for my thesis. I wanted my project to be influenced by *"Kheime shab bazi"* (Iranian traditional marionette theatre) and shadow play found in old Iranian history. In order to tell the story, due to the pandemic and the all limitations it brought, like working at home, and not having access to puppeteers or other resources, I decided to create an animation. I found stop motion is a good option to create an animation for this project.

Fourth, I chose the story of Zal because this story is resonating today. We can see power, discrimination, bias, love, hate, magic, and forgiveness which makes the story dramatically interesting, engaging, and vibrant.

Finally, it is very exciting to create a performance from concept through design, fabrication, directing, and the whole production process. This is an ambitious project where a variety of skills and techniques are required to create a successful project.

About Shahnameh

Shahnameh is a long epic poem written by the Persian poet Ferdowsi between c. 977 and 1010 CE and is the national epic of Greater Iran. The *Shahnameh* is a monument of poetry and historiography, being mainly the poetical recast of what Ferdowsi, his contemporaries, and his predecessors regarded as the account of Iran's ancient history. The seminal work of Persian literature is the *Shahnameh,* an epic poem that recounts the history of pre-Islamic Persia or *Iranshahr* (Greater Iran). The *Shahnameh* contains 62 stories, told in 990 chapters with 50,000 rhyming couplets. It is divided into three parts— the mythical, heroic, and historical ages. Written in modern Persian, the *Shahnameh* is a work of poetry, historiography, folklore, and cultural identity and is a continuation of the age-old tradition of storytelling in the Near East.

Under the patronage of the Samanid dynasty, Hakīm Abul-Qāsim Firdawsī Tūsī (Ferdowsi) began his epic poem in 977, taking thirty-three years to complete it.

After its first appearance in 1010, the *Shahnameh* directly affected the epic and poetic works of all Persian speakers and writers for centuries. Several scholars credit the continuity in modern Persian to the *Shahnameh*. It influenced not just Persian speakers but also the cultures of Turkic peoples in Central Asia, Azerbaijan, and the Ottoman Empire, as well as the Georgian, Kurdish, and Pashto literary traditions.

The *Shahnameh* continues to be one of the main pillars of the modern Persian language.[1]

---

[1] "Thousand Years of the Persian Book." https://www.loc.gov/exhibits/thousand-years-of-the-persian-book/epic-of-shahnameh.html

Library's Oldest Shahnameh Manuscript

The *Shahnameh*, the seminal Persian literary work, is based primarily on a prose translation of an earlier Pahlavi work, known as the Xvatāynamāk (Book of Kings), from the pre-Islamic Sassanid era (224–651). The poet Daqiqi (942–980), a contemporary of the poet Ferdowsi (940–1020), began rendering the *Shahnameh* in verse, and, in turn, Ferdowsi included many of Daqiqi's couplets in his version of the *Shahnameh*. Although the manuscript's place of publication is not noted, it is in an Iranian style with text written in the Persian Nasta'liq calligraphic style, one of the oldest and most prized styles of Persian calligraphy used for manuscripts.[2]

One of the chapters of *Shahnameh* is about Manuchehr's kingdom. The story of Zal which I chose for my project was included in this chapter.

Synopsis

Sam was Iran's champion during the rule of Fereydun (the king before the Manuchehr) and Manuchehr was appointed by him to rule Zabulistan (Sistan), and then Mazandaran. Sam, who had been fretting that he had no son and heir, was delighted when a son was born to his wife. His joy soon turned to fear and anger when he saw that his son, named Zal, had the hair of an old man. All reason and wisdom left Sam thinking his son was either an old man or a demon, ordered the baby be taken to the foothills of the bejeweled Alborz mountains and left there.

The abandoned Zal was found by the magical Simorgh, an enormous phoenix-like bird with red and gold feathers, who had her nest on the summit of the mountain. Carrying the

---

[2] "Thousand Years of the Persian Book." https //www.loc.gov/exhibits/thousand-years-of-the-persian-book/epic-of-shahnameh.html#obj001

baby to her nest, the Simorgh took care of Zal for many years, bringing him up as her own.

Some years later, King Sam was reminded in a haunting dream of how badly he had behaved toward his son. Sam felt great remorse and set out to the Alborz mountains to see if his son might still be alive.

The Simorgh knew it was time for Zal to return to his father and Sam found his son, now a handsome young man who had been brought up well by the bird. Zal didn't want to leave, but Simorgh urged him to part. Giving Zal three of her feathers, she told him if he was ever in trouble, he must only burn the feather and she would come instantly to his aid.

Zal traveled to meet the King of Kabul, Mehrab, who paid tribute to Sam. There Zal heard fascinating tales about the beauty of Rudabeh, Mehrab's daughter. According to these tales, Rudabeh had eyelashes like raven's wings, and a face as fair as the moon. Zal was filled with longing. Rudabeh too had heard equal praise of Zal and was intrigued by stories of his amazing strength. Finally, the two were able to meet, but Rudabeh's friends teased her about falling in love with a white-haired man - a man who had been brought up in a bird's nest. Zal too was apprehensive, for Rudabeh had descended from the evil King Zahak, from whose shoulders grew serpents that had to be fed with human brains.

Despite the teasing and apprehension, Zal and Rudabeh vowed to meet. Rudabeh offered to let her hair down from her tower so that Zal could climb up and see her. Wishing not to hurt the delicate Rudabeh, Zal used a rope instead. Once united, they promised their hearts to one another alone and to love no other. Zal pledged to her, "I swear to you that

this life will be unbearable for me if I cannot spend it in your presence. And I call upon

Heaven to hear me that none other, but you will I call my bride." Rudabeh replied, "I too

swear to you this oath." The families worked through many challenges and obstacles and

were able to finally agree to their marriage and an alliance according to custom and law.

The wedding was joyous and lasted for thirty days.[3]

---

[3] "Shahnameh Heroes." https://www.heritageinstitute.com/zoroastrianism/shahnameh/heros.htm

ANALYSIS

Textual Analysis

Introduction

The second and longest stage of Ferdowsi's *Shahnameh* is the heroic or legendary stage

which includes the stories of Sam, Zal, Rustam and Sohrab, Princesses Rudabeh and

Tahmineh as well as Rustam's horse Rakhsh.

This part of *Shahnameh* spans four generations of fathers and sons, courage and skill,

love and honor, war and grief. It is also a story of fathers and kings making mistakes;

mistakes that are sometimes corrected and mistakes that at other times end in tragedy.

The conclusion of the story is a warning for future kings on how to conduct themselves

and the tragedy that can befall them when they stray from the right path.[4]

The Characters

The principal characters in the story and their relationship with one another are as

follows:

- Sam, King of Sistan (Sagistan)

- Sam's wife

- Zal, son of Sam and his wife

- Princess Rudabeh, the King of Kabul's daughter

- The Simorgh, a gigantic mythical bird

---

[4] "Shahnameh Heroes." https://www.heritageinstitute.com/zoroastrianism/shahnameh/heros.htm

- Rustam, son of Zal and Rudabeh

- Princess Tahmineh, wife of Rustam

- Sohrab, son of Rustam and Tahmineh

- Rakhsh, Rustam's horse

The lineage of the Siestan heroes was: Garshasp, Nariman, Sam, Zal, Rustam, Sohrab, and Barzu.

The family of Sam was kings of Sistan (Sagistan) and Zabulistan, nations part of the greater Iran. While their kingship was at the pleasure of the King of Kings of Iran, they nevertheless had a special role amongst all the vassal Iranian kings who formed the Iranian federation of kingdoms - they were protectors and guarantors of the Iranian throne; kings whose help was sought by the Iranian overlords during their darkest hours.

Location

The *Shahnameh* tells us that Sam and his family were kings of Sistan (Sagistan) and Zabulistan. At present in Iran, Sistan (also Seistan) is a province that shares its name with Baluchistan, with Zabol as a principal city in its north and Zaboli in the center-east. Zabol is also a south-central Afghan province. Iranian Sistan is ethnically Iranian and Baluchi while Afghani Zabol is ethnically Pashtu. Zabol appears to be an older name while Sistan has been connected (tenuously) to a Saka invasion and migration into the region's western part in 128 BCE. If correct, then Sistan could have become the eastern part of the original region while Zabulistan remained the western part.

Sistan has other names as well, one being the Achaemenian name Zraka, then Zari, and the other Nimruz, meaning mid-day. Today, Nimruz is the Afghani province that borders

Iranian Sistan-Baluchistan. The name Nimruz is thought to reflect a belief that the prime meridian of the known world stretching from Europe and Africa on the west to Japan in the east ran through Sistan. One tradition has Zarathushtra first locating the meridian and then building an observatory close to the present city of Zabol. A principal Sistan town in antiquity was at Shahr-i Sokhta and amongst its ruins an elaborate c 2500 BCE Bronze Age palace has been excavated.

Pahlavans & Their Role

The inhabitants of Sistan and Zabulistan are connected with the Indo-Iranian Scythians and Parthians. The Parthians, later known as Pahlavi, lent their name to *Pahlavan*, the champions of Iran famous for their feats of immense strength and valor and experts in martial arts.

The creed of the *Pahlavans* is to be pure, truthful, unpretentious, good-tempered, and only then strong in body. *Pahlavans* seek to develop mind, body, and spirit. They engage in learning as well as physical strength. The pursuit of both must however be preceded by modesty. "Learn modesty if you desire knowledge," goes the saying, "for a highland cannot be irrigated by a river." (Kanz ol-Haghayegh).[5]

Today, wrestlers in Iran, Pakistan, and northern India are called *Pehlvans*. They train with maces and clubs in Mithraeum-like (i.e. windowless Mithra temples) gymnasiums called *Zurkhane*. During their meditative exercises that have spiritual overtones, a musician plays the drum while reciting *Shahnameh* verses that recount the heroic deeds

---

[5] "Shahnameh Heroes." https://www.heritageinstitute.com/zoroastrianism/shahnameh/heros.htm

of Rustam and other champions of Iran. The epic itself sits in a place of special reverence within the *Zurkhane*.[6]

The Role of Women in Shahnameh

In the first half of the *Shahnameh*—which focuses on Iran's mythical past, particularly Persian legends—many women play central roles as the mothers of kings and warriors, the heroes in the epic poem. Dr. Dick Davis writes that surprisingly there are "over fifty women, named in the poem, and a number of them play a significant and sometimes primary role in the narrative."[7] One such woman is Rudabeh, the princess of Kabul, who gives birth to one of the greatest *Shahnameh* heroes, Rostam. She is presented as a free agent and engineers her own life by defying male authority, even that of her father. In the story, Rudabeh lets down her long hair so that Zal, her future lover, and husband, can scale the building and join her on the roof. (He chooses, however, to use a lasso to climb the wall.)

Rudabeh is independent and takes matters into her own hands, and by no means is she an exception. A whole host of women in the *Shahnameh* actively pursue their desires and take initiative, and they are mostly presented in a positive light for doing so. Moreover, there is hardly any immediate social backlash. Instead, a woman making choices based on desire is glamorized and presented as entirely understandable—something almost unheard of in traditional society.

---

[6] "Shahnameh Heroes." https://www.heritageinstitute.com/zoroastrianism/shahnameh/heros.htm
[7] "Women in the Persian Book of Kings," https://asia-archive.si.edu/women-in-persian-manuscripts/

The women in the *Shahnameh* are not just celebrated for their role as mothers. Like Rudabeh, they are known for their beauty, intelligence, independence, and fierceness. The epic poem features women as diplomatic envoys and queens. This gives them a degree of political power and, as Davis has written, has allowed the women "to confront the world on their terms."[8]

Despite the action-packed and colorful representations of these works, the strong women in the *Shahnameh* sometimes take a backseat to their male contemporaries. Letting the stories of kings and heroes overshadow those of powerful queens and wise women risks diminishing the complexity of these works, which, after all, is what makes them so exquisite.[9]

Another strong woman character in Zal and Rudabeh's story is Sindokht who has a game-changer character bringing peace to the two nations by preventing a big war during a delicate moment. In another story in *Shahnameh*, Tahmineh who is a powerful and decisive woman, chooses Rostam, one of the *Shahnameh* heroes, to become her partner.

Zal and Simorgh Story

In the Zal and Simorgh story, we can see power, discrimination, love, hate, magic, and forgiveness which makes the story dramatically interesting, engaging, and vibrant as the story resonates with today.

Before Zal comes, Sam is the decent guy in the story. He is brave and trustworthy.

---

[8] "Shahnameh Heroes." https://www.heritageinstitute.com/zoroastrianism/shahnameh/heros.htm
[9] Dick Davis, "Women in Shahnameh," in *Women and Medieval Epic: Gender, Genre and the Limits of Epic Masculinity*, edited by Sara S. Poor and Jane K. Schulman (Palgrave MacMillan: 2007), 67-90.

"He was Iran's champion during the rule of Fereydoun, Manuchehr (kings of the kingdom). He was appointed by Manuchehr to rule Zabulistan (Sistan), and then Mazandaran". [10]

Sam's character changed suddenly when he was told Zal's appearance is different. He cannot accept his only child who isn't like him. He abandoned his only child because of the difference in his appearance. On contrary, Simorgh, who is even not human, easily accepts to raise Zal like her child.

As I mentioned above, the women's strength and their characters are playing a crucial role in the *Shahnameh*. In Zal and Simorgh's story, Simorgh is the strongest character in the story. She is wise, powerful, benevolent, and magical. She is a female bird who embodies honesty and loyalty without any doubt. She raises and looks after a child who is not even her kind. When she finds out there is a chance for Zal to have a great life, she encourages him to leave and look for new opportunities without any selfish desire.

Set and Environment- Spatial

I believe the strong point of *Shahnameh* is you can visualize the story very clearly when you read the poem. The literature of *Shahnameh* flows very easily throughout the whole story with vivid descriptions of the environments and characters. This helped me define the design of the varied scenes and characters. For example, how many locations I needed or what architectural style I would have for the palace and bedrooms, or how many entrances and exits my story required.

---

[10] Zabihollah Safa, *Hamāseh-sarāyi dar Irān.*, Tehran, Amir Kabir Press, 2000.

There are four different locations in the story; the room in which Zal is born, Sam's room, the palace, and Alborz mountain.

I believe Alborz mountain is the most important location in the whole story. The climax of the story happens here.

In Alborz:

- Zal was abandoned

- Simorgh's found him and raised him

- Zal and Sam met each other for the first time.

Symbols

1. Sam's dreams:

Sam's dream is the place where he faces his conscience. The dream gives him a clear vision of his actions. His dream causes him to rethink his behavior.

2. The Simorgh's feather:

Simorgh gives Zal her feather and tells him if he gets into trouble, he can burn it and Simorgh will come to help. I believe the feather is a symbol of trust between Simorgh and Zal. By having that feather he can rely on Simorgh forever. He has part of her that gives him strength and bravery. He feels he won't be alone, and she is always with him. Starting a new life for Zal is frightening and risky. The feather helps him to find the comfort, trust, belief, and courage to begin another chapter of his life.

Audience

I chose "narration" to tell Zal and Simorgh's story similar to *Naghali*. *Naghali* is a narrative style of art and a mixture of storytelling with acting and singing. It is one of the oldest forms of Persian traditional theater performed in different places like cafes. These cafés are usually decorated with paintings based on the *Shahnameh*. The storyteller (*Naghal*) tells the story while showing the paintings. This was a popular social activity. People went to cafés and had tea, listened to the stories of *Shahnameh,* and discussed it with other people. The other interesting point was even villagers who were not able to read, and write, knew the stories of *Shahnameh* and other poems. The stories have been passed from one generation to another.

<u>**Scenic Breakdown**</u>

By breaking down the scenes, the storyline became more vivid for me. I discovered what exactly was happening in each scene. Since *Shahnameh* is a poem, doing a scenic breakdown was beneficial.

 Breaking down the stories into several pieces helped me to reveal how many scenes and acts I wanted to have. I also found the connection points in terms of ending the scene and the beginning of the next scene, which is kind of challenging to find in this poem. For example, After Nany informed Sam about his child, she left the room. In the next scene, Sam was talking to god. I decided there was no need to have a break between these two scenes. In my production, by having Nany leave the room from the back door, I combined these two scenes into one.

Apart from that, the scenic breakdown showed me how many locations were required, in what period the story was happening, and when I needed to change the location. It organized the requirements for this production. Showing the length of each scene was another important part. For instance, in the first scene which was Zal's birth, the poet only described the appearance of Zal. When I did the scene breakdown, I decided to make this one line into a whole scene.

Storyboard

One of the crucial keys to success in this project for me was doing the storyboard. Storyboarding was a great resource for me, especially for designing. It helped me to start my process very efficiently. It also helped me to visualize each scene and showed me the correct path. I did the storyboard three times:

First, I made the whole story with original illustrations.

I created the second storyboard by collaging locations and characters.

The third and final version was with my design and all finalized characters.

When I first did a storyboard for staging, I used some of my research images related to locations and characters to see the visual version of my story. It assisted me to clarify and fill in all the gaps. It revealed details of the story. It showed what places I needed, what actions I wanted, and finally what expectations I had from each scene. It displayed the dynamic of each scene; the directions for entrance and exit, the number of characters in each scene, and finally, how I wanted to connect the scenes. Later in my final version, it also helped me to discover the puppet movements on the grid.

To make a movie, having each frame in the storyboard helped me a lot during the process; when there was an issue, I was able to find the solution by looking at the storyboard. For example, when I wanted to make Sam's dream scene. The scene was a combination of shadows and puppets including a lot of details. By looking back at my storyboard, I was able to decide more easily which items were needed in the set and the recording. I would probably lose a lot of important key points without using the storyboard.

CHAPTER III

RESEARCH

Motivation and the Research Process

The main reason to create this project came from the course entitled "Technical

Direction" by Professor Michael. Cottom in spring 2019, at UMass. In this course, I

learned how to design and make a giant puppet.

I learned the mechanism of puppets in terms of construction and control through the

rigging. It was a very exciting and challenging process for me to make each part and

assemble all pieces. Since I was fascinated with the whole process of creating the puppet,

I decided to work on the puppetry area for my final project. In addition, I have always

been looking for a chance to share part of my culture and art with audiences here in the

USA. Therefore, I thought it would be a great idea to choose a Persia story for the puppet.

I chose Simorgh's character based on Zal and Simorgh's story, from the Persian epic

poetry book called *Shahnameh*. I was planning to design and build a Simorgh marionette

and have some performers as puppeteers.

Due to the pandemic, closing the campus, and studying and working from home, I lost

my resources like the scene shop facility, the tools, and other students for performing.

Therefore, I looked for a solution so I could continue working on my project. I decided to

make the whole Zal and Simorgh story in smaller sizes instead of just one giant puppet

which I was able to design and build in the home area. I started to search for different

types of puppetry, especially in Iranian traditional marionette theatre like "*Kheime shab*

bazi" and shadow theater. At the same time, I started to learn more about *Shahnameh* and the stories. I began to study the history behind the whole book.

Research-History of Shahnameh

Shahnameh was an ancient poem book that plays a crucial role in Persian literature. It's not only an epic story that is great literature but also helped to preserve the Persian language. Since Iran was invaded, the Persian language was in danger of extinction. For centuries, people learned stories from *Shahnameh,* and they told these stories to the next generations.

I began by reading the articles about *Shahnameh* but the most helpful knowledge I achieved was from a researcher, scholar, and director Bahram Beizaie. He's given several lectures about *Shahnameh* online in Stanford university which was a great resource for my project such as*, the meaning of Shahnameh as a social work*, *non-written myths of pre-Shahnameh period, Iranian myths in traditional spectacles* in Stanford Iranian studies program.[11]

He explained the history behind the *Shahnameh* and how Ferdowsi expressed his opinions from the characters' dialogues. Ferdowsi, through *Shahnameh*'s stories, preserved the Iranian history, culture, and values before the invasion so that they might not be forgotten.

---

[11] "Bahram Beyzaie and the Shahnameh, Stanford Iranian Studies Program."
https://www.youtube.com/watch?v=1hb71FQSacQ&list=PLW9x2aQT0PFP31TokGozAd6mKpC3Z6dtR

The English resources I used included a great translation from Helen Zimmern which among the other translations, I found very precise to the original one.[12]

<u>Research- Puppetry</u>

Iranian Puppetry

The history of puppet shows in Iran goes back to pre-Islamic times. Today, we separate puppet shows in Iran by using the two titles of "shadow play" and "*Kheime shab bazi*". In the shadow play, the story was shown with the movements of several puppets whose shadows were exposed in front of a light source. But in the "*Kheime shab bazi*", the audience saw three-dimensional puppets complete with color on the stage, not their shadows. The elements and tools in both methods of performance were similar but with notable differences. For instance, the puppets in the shadow play were two-dimensional and were made of opaque leather, and sometimes made of clear and delicate fabric (which allowed light to pass through it).

Making moving puppet joints in the shadow play was a delicate and difficult task. Moving the puppets with thread was difficult because the light weight of the puppet prevented the isolated movement of the limbs separate from the whole body. Therefore, in the shadow play, the puppets were moved with thin canes and sticks. On the other hand, the puppet in "*Kheime shab bazi*" was made of cloth and wood, and moving joints, hands, and feet, which did not cause the same problems as in shadow play. With yarn or

---

[12] Ferdowsi. *Shahnameh (The Epic of Kings)*. Translated by Helen Zimmern. Iran Chamber Society, MIT, 1883.

other threads, the proper weight of the puppet helped prevent unwanted movements and facilitated smooth articulation of the limbs.

The puppeteers have been mostly vendors, and the popularity of puppet shows may have been aided by these plays needing only light and portable equipment and tools. This equipment could be compacted, even in a box. The peddlers, by going to new places, visiting new people, and facing new conditions, expanded the puppet stories with folk heroes and new titles influenced by local people. For instance, during the Safavid period, when the business trips of Iranian merchants to India increased through the Oman Sea, many Iranian travelers saw and liked the puppets and puppetry in India and brought some of their puppets (mostly from Mumbai) to the south of Iran.[13]

Exploration of Puppetry

To learn more about shadow play, "*Kheime shab bazi*", and other types of puppetry from different countries, I started to study more about them and attended some workshops. In these workshops, I learned new techniques and how to make puppets using these techniques.

Due to the pandemic, learning from professionals was challenging. On one hand, all the in-person workshops and classes were canceled which caused losing some resources like access to scene shops, studios, and working with tools under supervision. On the other hand, I could participate virtually in many workshops from different parts of world. Therefore, I began to search for virtual workshops and webinars to attain more knowledge about puppets and puppetry.

---

[13] Beyzaie, Bahram. *Namayesh dar Iran* [A Study on Iranian Theatre]. Tehran: Roshangaran, 2000

There were some workshops I attended:

- Puppetry in Iranian history by Amir Sohrabi, the founder of the Puppet Museum in Iran

- A shadow theatre workshop by Norbert Götz

- Nori Sawa's Puppet Arts Workshop

- Abdollah Alimorad, puppet designer

- Mojdeh Kia, miniature set designer

- Alireza Owji, the character designer

I also took part in virtual festivals to watch puppet shows which was a great experience:

- UCONN fall puppet slam

- Women's Suffrage Puppet Pageant for Celebrate Mansfield by Ballard institute and museum of puppetry

- Virtual toy theater festival (six-day duration)

They all helped me to get an idea of what types of puppetry I am interested in and what resources and skills I needed to start my puppetry project.

One of the most valuable webinars I attended was "puppetry in Iranian history" by Amir Sohrabi which was held in Iran. I was able to attend it because it was online. It was a great opportunity for me to learn more about traditional puppetry in my country. I learned that one thousand years ago, puppetry in Iran was shaped and formed as a reason for ritual ceremonies relating to nature and the human response towards it, like praying for the harvest, rain, or a safe birth. To make puppets in these old times, people used local materials such as wood, and fabrics, and made colors from different herbs. As a result,

due to Iran having various environments, each region had different puppets; the sea, the jungle, and the desert.

Another workshop was with Iranian puppet designer Abdollah Alimorad, who taught how to make clay puppets and showed some techniques to mobilize our puppets.

Puppet Kitchen Channel by Eric Wright was another great resource for me. I learned the construction and mechanism techniques for making puppets. He had live workshops for making puppets for a puppetry production especially paper puppets. It covered topics from puppet design, fabrication, and puppet wrangling in puppet performance.

Another resource for me was the KS Productions TV channel in which Cynthia Thornton taught very simple steps to make articulated paper puppets. By illustrating or printing the figures on paper, cutting them out of paper, and adding joints by creating holes and using brass fasteners, buttons, or pieces of wire, an articulated paper puppet can be made.

The next workshop was Nori Sawa's Puppet Arts Workshop, in which he shared some techniques and materials for a shadow play. He used different materials to have different effects. For instance, by pouring oil or paint into a glass box, he made some colorful shadows. In the shadow play, three items are crucial for the show; objects used to create shadows, the screen, and the lights. The fascinating point of this workshop was using different materials for screens and even objects to create different shadows.

He used transparency papers, scrap sheets, colorful cellophane, fabric, lace, gel lights, and color filter for the objects which was interesting choices. He also used white butcher paper and wax paper for the screen. Another interesting technique was by scratching the screen, he had light through the screen with a different texture.

After attending a variety of puppet-related workshops, and webinars, and seeing online events, I was able to choose what type of puppetry would best fit my project.

Identifying Qualities of My Project

There are different types of puppets I could choose for my project. It could be from different materials like clay, fabric, paper, wood, plastic, etc. Also, puppets could be two-dimensional or three-dimensional based on these materials. I chose articulated paper puppets and shadow puppets based on my resources:

- Environments and scale: I had a limited space (a room in a house) to design, make and move the puppets and all the scenery. There were many other supporting areas to consider. I needed a real theater facilities space like a shop space, backstage space, and performance area and a space to be able to move camera and lighting sources. I was looking for some types of puppets in a scale workable in a house room. Among different types of puppets, I found articulated paper and shadow puppets to be more feasible to design and build. I was able to work with the 1:18 scale. Also, these puppets had more possibility to work with in terms of structure and movement; There was no need for any heavy or huge rigging/ tools to move the puppets in a house room.

- Tools: Due to not having access to scene shops or studios, I was able to make these kinds of puppets with some basic tools like scissors, X-Acto knife, straight edge, paper cutter and trimmer, laser cutter, etc. There was no need for any advanced and huge scene shop tools like a table saw, drill press, etc.

- Material: Choosing appropriate materials for making puppets was a crucial role in my project. Among all materials like wood, metal, fabric, clay, and paper, I chose paper as the main material for puppets due to a couple of reasons. First, the cost of paper, cardboard, and cardstock is incomparable with the cost of wood and metal and it is affordable. Second, availability: Since it was my initial experience with this kind of puppetry, I needed a material that gave me the possibility to try it a few times without worrying about the availability and the cost. Third, it didn't need any advanced scene shop tools. Also, for the set, in addition to cardboard and card stock, I used clay, plaster, foam, foam boards, etc.

- Time: Another essential part was I had limited time to make the whole project. Therefore, I needed to choose a type of puppet that I was able to design and create in a specific time frame.

  Furthermore, shadow play was traditional Persian puppetry and it was part of my country's culture which motivates me to learn more about it. Also choosing full-color articulated paper puppets gave me the chance to create a world with old Persian paintings (miniatures) which I explain more about it in the next chapter.

<u>Research-Illustration</u>

It was a challenging decision and took a significant amount of time to find the right approach to create my puppet's characters.

I began my research by focusing on the illustration of the characters.

I took part in several workshops and live events to get familiar with the process of character design such as adobe 2020 online sessions. Another webinar was presented by

children's author and illustrator Ben Clanton. I learned some techniques to create characters from these workshops by playing with basic shapes and then adding some layers and emotions.

I also talked to several professional illustrators to get some ideas for character design and find the best way to create characters for this epic story.

Meanwhile, I studied more about *Shahnameh* and examined the ancient books. *Shahnameh* was not only a textbook, Other arts evolved around it. In ancient times, Painters started illustrating based on *Shahnameh* stories. Different *Shahnameh* prints included a visionary part and magnificent illustrations. These books were published a hundred years ago. Today, we can find them in different museums and libraries around the world such as the Metropolitan Museum of Art, Brooklyn Museum, and British Museum. These different books are prominent resources for illustrations and calligraphy.

Most of *Shahnameh* was originally illustrated with Persian miniatures which all are captivating. In miniature, the painter takes ideas from nature or a story and then records and paints the components of nature by using abstract symbols and concepts. They do not seek direct and objective reflection. In miniature, nature or story is reflected with more elegance and complexity.[14]

Since character designing was not really related to my major and the whole process could be very long, I decided to use these original illustrations as a main resource for the puppets. However, studying, choosing, editing, and working on these miniatures still took six months!

---

[14] "Miniature." https://salamshop.org/blog/miniature

<u>Research-Set and Environments</u>

After doing the scenic breakdown and the storyboard, I had clear ideas about what

environments I wanted and how many locations I needed to design. Since this story is

fiction and nonrealistic, finding the correct time and architectural style was challenging.

Since this is a mythic story, it didn't happen at a specific time and location. To choose the

right architectural style for my inner space, I took each scene into consideration. I chose

two different styles and dynasties for this production.

One of them is the Achaemenid or *Parsi* style (from the sixth to the fourth century BCE)

manifesting in the construction of spectacular cities used for governance and inhabitation

(such as Persepolis, Susa, Ecbatana), temples made for worship and social gatherings

(such as Zoroastrian temples), and mausoleums erected in honor of fallen kings (such as

the Tomb of Cyrus the Great).[15]

The other one is the *Isfahani* style. This architectural style was spanning through the

Safavid, Afsharid, Zand, and Qajarid dynasties starting from the 16th century onward,

e.g. Chehelsotoon, Ali Qapu, Agha Bozorg Mosque, Kashan, Shah Mosque, and Sheikh

Lotf Allah Mosque in Naqsh-i Jahan Square.[16]

In my scenic breakdown and storyboard, I had three different inner spaces: the palace hall

and two bedrooms.

---

[15] John Boardman. *Persia and the West: An Archaeological Investigation of the Genesis of Achaemenid Art*. Thames & Hudson. 2000. p. 102-122.
Béatrice André-Salvini. *Forgotten Empire: The World of Ancient Persia*. University of California Press. 2005. p. 54. https://en.wikipedia.org/wiki/Achaemenid_architecture
[16] M. Karim Pirnia, *Sabk Shenasi Mi'mari Irani* (Study of styles in Iranian architecture), Sorosh Danesh Press,2005. https://en.wikipedia.org/wiki/Iranian_architecture

I chose the Persepolis building architecture (*Parsi* style) for designing a palace hall. Persepolis was the ceremonial capital of the Achaemenid Empire. It is situated in the plains of Marvdasht, encircled by the southern Zagros mountains of Iran.[17]

Persepolis buildings had enormous tall columns with stone which are prominent features in this architecture. It presented power, pride, and magnificence. I found these characteristics appropriate for Sam's palace hall.

For the bedrooms, I used the *Isfahani* style. In this architectural style, it used abundant symbolic geometry, pure forms such as circles and squares, which by combining them make a remarkable and striking pattern. The plans are based on often symmetrical layouts featuring rectangular courtyards and halls.[18]

To design Zal's birth room and Sam's bedroom, I was looking for an environment with a friendly, cozier, and comfortable atmosphere. I found the *Isfahani* style as a good choice. I used colorful windows and curves to break the rigidity and intensity that existed in the design of the palace hall.

[17] "Persepolis." UNESCO World Heritage Centre (2006). "Pasargadae". Archived from the original on 5 March 2020. Retrieved 26 December 2010.https://en.wikipedia.org/wiki/Persepolis

[18] "Mathematics Persian Architecture." https://muslimheritage.com/mathematics-persian-architecture/

CHAPTER IV

ARTISTIC AND TECHNICAL DESIGN PROCESS

Project Management

After doing research, studying, and collecting information, it was time to clearly define, plan and organize my project. Project Management provided me with an approach to understanding this multifaceted project by applying a series of steps toward creating a framework from which to identify the myriad of tasks that needed to be completed. Here is how I applied the five phases of project management to my project. By creating the Gantt chart, I've created a schematic of the whole process which included initiation, planning, execution, monitoring, and closure with deadlines that combine to turn my project idea into a working product.

- Research and identify the project: I clarified my specific expectations, goals, and specific deliverables along with a start and finish date. I wanted to tell Zal and Simorgh's story from *Shahnameh* with articulated paper and shadow puppets and make a movie. Later, I found out the deliverable project should be a stop motion video based on my resources. (more details are described in the puppetry and stop motion section.)

- Plan and organize the project and its resources: I did storyboards, scenic breakdowns, and drafting the sets. These helped me to find out how many puppets and settings I needed to design and create. And based on that, what materials and tools I needed.

- Execution of the project by making the prototypes and mockups: Next step was making mockups and prototypes which were necessary to clarify exactly what puppets and sets were to be and visualize my project on a real scale.

- Monitor, control, and check prototypes to ensure quality and to see what worked or didn't work; I needed to check the whole project constantly for any issues, then I'd look for a solution and fix it. Documentation was really helpful in this step. I was able to check each part of my project with the previous version.

- Make the final version: After checking and monitoring, it was time to finalize all aspects of my project and deliver the final project. After making the final version of puppets and sets, I had stop motion videos for each scene. Finally, I edited all videos to create the movie. Later, I shared the movie online around the world.

<u>Prototype</u>

To gain a vivid outlook of the whole project, I wanted to create a prototype of the puppets and scenery. These important steps in my process allowed me to avoid unnecessary mistakes and risks.

When I finished my initial prototype, I could see whether my ideas were practical and worked efficiently. It helped me to find strengths and weaknesses in different parts of my project. I found out what is required to be changed or eliminated and what I needed to keep. For instance, I learned how to move puppets' hands and heads in different ways and which scale worked best for the puppets from a camera view by trying various options. In addition, I discovered how I could manage my resources like materials, space, and time. Furthermore, making a prototype video confirmed for me that I was able to tell the story smoothly through stop motion video.

<u>**Scale**</u>

One of the challenges I had at the beginning was finding an appropriate scale for my project. I planned to take photos with my cellphone with the standard lens, but I also had other criteria that would help determine the scale. My extremely limited space and available tools had a huge impact. I had to somehow do this whole project at home without a separate scene shop or studio space. I also don't have a team to work with. Therefore, I was looking for a scale that worked with the limited resources I had available. After trying different scales of puppets and sets and making some mockups of puppets and some parts of the sets, I chose the 1:18 scale for my project. With this scale, I was able to fit all the elements of this production within our small dining room. This included all the supporting areas like backstage space and fabrication areas. The 1:18 scale met all these requirements. It was also a traditional scale for models and miniatures.

<u>**Puppet Fabrication**</u>

Illustration for Puppets

As I mentioned previously, I decided to use ancient Persian miniature paintings as an illustration resource for my puppet characters. I redesigned and collaged the paintings to achieve a unique look for each character including color, image quality, and costume design.

There were different illustrated *Shahnameh* books that I was able to use as resources. Although it was much easier and time efficient to use only one illustrated book as a main resource, to achieve better choices for characters, I chose miniature paintings from different illustrated *Shahnameh* books and other ancient resources. Most of these

illustrations were related to the Safavid period which made most of the characters'

costumes belong to that period.

After choosing my cast from ancient paintings, I redesigned and edited them in

Photoshop. I quickly realized I needed more training at this, so I made extensive use of

online tutorials. With each character, I collected, collaged, and edited numerous paintings

to create the look I wanted. The process of creating Sam involved multiple variations of

his body, clothes, and makeup. It took considerable time to achieve the right qualities.
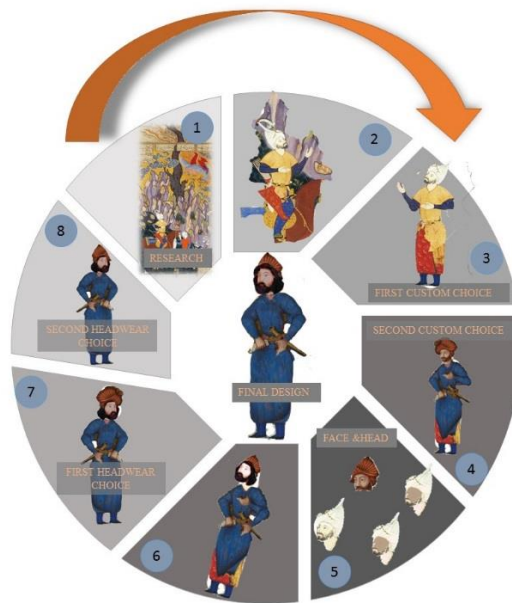

Figure 1. Sam Character Design Process

This design process was a great opportunity for me to study miniatures and paintings.

Finding the right Simorgh was also challenging. I didn't find the magnificent one in the

miniature paintings for a long time. She played a crucial role in the story and I didn't

want to lose her presence by choosing the wrong one. After a lot of research, I found a

photo of an ancient gold-on-paper illustration with Simorgh engraved on it with no color.

I cut it out from the background and painted each part with my choice of different colors.

At first, the main color of the Simorgh was blue, but later because of the color of the sky,

I changed it to red.

Figure 2. Simorgh Character Design Process

Puppet construction

For making articulated paper puppets, there are several techniques and methods which

I've learned online from several artists.

For my initial paper puppets, I followed some very simple steps to make them articulated.

• Trace a photo, make a drawing, and work out the joints in a sketch.

• Trace out each piece separately (using a glass box or graphite) to show the size of

pieces, how many pieces are required, and how to be positioned.

• Cut out the pieces; Use an electronic cutter for the speed, a mini cutter, or a 3d printer.

• Mark the joint with a dot. Use the first tracing image to decide where the joints are and then go over the top of it. Then push down with a pen to indicate where to go.

• After cutting and tracing, use a push pin to create a hole.

• Use brass fasteners, buttons, or pieces of wire to create all the articulated pieces.

After finishing designing each character, I printed them in scale and cut them out of paper. Then, I adhered them to one layer of card stock. For the articulation, in place of the joints, I used mini brads. This was a great tool to create proper mobility for puppets. By loosening and tightening the end of the brads, I was able to move the puppets' hands and heads smoothly.

At first, I thought showing the brads on the joints would not be a problem. In puppetry, seeing the structures on puppets was always common and interesting. But when I finished my mockup videos and saw them on a bigger screen, I realized it would be better if I could find a way to hide the brads. I came up with an idea to have another layer on them and find a way to glue the layers together without losing the ability to move. The helpful trick was to have a couple of layers instead of one layer and use some adhesive foam dots which I've learned from live session workshops from Eric Wright. This idea also made paper puppets more dimensional which looked much better in the movie.

To make the puppets stand on my set, I had some small foam support at the back of the puppets and used double-sided tape or pins to stick them on the floor.

Puppetry and Stop Motion

Now that I had a good sense of the puppet world I wanted to create; I began to experiment with the actual storytelling with the puppet prototypes. As I mentioned before, pre-pandemic, I was thinking of a live and in-person show and having one giant puppet. Working during the pandemic, I decided to create a story with smaller puppets and make a movie by recording a video and publishing it online. After designing my complete cast of puppets, the next step was to try different ways to animate my puppets in a set and create a video. First, I tried to move the puppets with the sticks that were glued at the back of paper puppets with different angles. But moving the puppets with sticks did not work very well due to a couple of reasons.

First, playing with the sticks around my set was also problematic; I didn't have that much space to easily work with them and move them freely. Moreover, displaying sticks on the back of puppets or their shadows didn't look good in the video.

In addition, in some scenes, there was more than one character and I needed some puppeteers to do the other characters which was not possible due to the lockdown and working at home alone. I wanted to move the puppets individually.

I studied more about it which led me to have an idea about how best to present my story. Stop motion was the best solution I found. Although doing stop motion was completely new to me, it seemed more practical since I can take photos of each puppet movement and then add all photos together to make a video. In other words, it gave me the opportunity to change the movements and then take the next photo without the necessity of other puppeteers.

I knew learning and making a stop motion movie would take a lot of time and wouldn't

be easy at all, but I was eager to learn and try it. By watching online resources and

participating in some workshops, I eventually learned and found my approach. I found

out it wasn't necessary to work with very sophisticated programs and complicated

software. By taking hundreds of photos and using an app I managed to make it happen. I

combined all taken photos and stuck them together in the Stop Motion Studio app which

made a primary movie. To make a better movie and have more natural moves, I needed to

take more photos. For example, to change only one position, I took 30-50 photos.

Despite the extensive labor involved in stop motion animation, I felt confident in my

approach to taking photos and using the app would prove successful.

As I went further, I learned that making a stop motion video required meticulous

precision. You needed to be very careful with each movement, otherwise, little mistakes

could affect the whole video. For instance, if the puppet's hand is in front of his chest, for

the next photo, you cannot suddenly see it in front of his head. The continuity of each

shot needs to be very precise.

One of the big struggles in stop motion was to find the right path to move the puppet

from one point to another point in the various scenes. It was like playing on a chessboard.

Before doing any moves and taking new photos, I needed to think very accurately and

map out the next movements in advance. This allowed me to create the seamless

movements of the puppets.

I did some experimentation by shooting some sample puppet movements. First, I only

specified the origin and destination of the puppets and I moved them from point "a" to

point "b" and the whole path wasn't clear. After some experimental shooting and

merging photos, I discovered that the whole puppets' movements did not seem very natural in the video or movie. First, I thought using some magnetic board and putting a magnet on my puppets could be a good idea to move them easily. If the puppets were bigger and three-dimensional or the sets were two-dimensional, it would have worked. But with three-dimensional scenery (I will explain in the next chapter) and two-dimensional puppets, the magnet board was not working at all. To have a clear path for their move, I drew a grid on the floor to mark and track the multiple positions of the puppets. It was a big help in the shooting. Also, when I didn't like one frame, I was able to reshoot only that frame and not have to shoot the whole scene again.

In the shadow scenes, I used the idea of magnets to move my puppets more easily at the backdrop because the sets and puppets were two-dimensional.

Another challenging part was flying Simorgh in the sky. In the initial shooting, I moved Simorgh with a stick and removed it in movie editing. The result was not very clean, and I felt it was not worth the extensive time required. In the final shooting, to show Simorgh flying in the sky, I placed four stands in four points, out of the set, close to the edges. The height of these stands was more than the height of the set. I connected them with some wood sticks on top in a "Z" shape. Then I connected the Simorgh with silver wire to these sticks. By moving the Simorgh towards the stands, it seemed she flew in the sky.

Figure 3. Simorgh Flying in The Sky

Drafting

After completing initial mockups and prototypes, I started to develop my initial ideas. I started to design the sets by drafting on Vectorworks, a software for designing and architecture. To build the final set, drafting was a great resource. I was able to document all details and dimensions in advance. During the building of the set, whenever there was an obstacle, I easily checked the drafting to find the solutions. Also, drafting gave me more opportunities to try different designs for the set elements like windows, doors, and furniture. In addition, I was able to add more details to the design quickly since the software gave different tools with accurate measurements. For instance, to find the right pattern and forms for the windows, I was able to play with some lines and shapes in different degrees and sizes in Vectorworks. The complex table and bed surface patterns were also able to be designed more precisely with the help of Vectorworks.

Drafting helped me to redo my storyboard. It was a great resource and provided guidance for me to tell the story in the correct sequences. It helped me to improve the building of the final palace interiors as well as the environment as a whole.

Creating Environment

At first, it seemed that building the sets at this scale for puppetry was like making scaled models for theater productions. But building the sets for puppetry and stop motion was different from making models. I had to consider the proper space for my puppets and their movements. Also, I needed to design and build the sets based on the camera view for the stop motion.

After some research, I had initial ideas for creating the environment. The main locations in the story were the palace and Alborz mountain. The major story in the palace happened in three rooms.

Palace Hall

As I mentioned in the research part, The architectural style I chose for the palace hall was Achaemenid which we can find in Persepolis in Iran. (ca. 521-465 BCE).

One of the main elements in Persepolis's design was the column and protome (A protome is a type of adornment that takes the form of the head and upper torso of either a human or an animal). The protome was built as several different animal figures like; lions, eagles, horses, bulls, and human heads on the animal body. These protomes worked both symbolically and structurally; they symbolized power and cosmic balance, but they also

maintained the balance and offered real structural support, with the protome capitals

forming a socket that held the roof beams in place.[19]

I designed the palace hall based on a "welcoming hall" and "Apadana palace" in

Persepolis. These palaces had an array of stone-fluted Persian columns topped by double

bull protomes. These columns were composed of a square base and round torus.[20]

Gigantic doors were another element of this architecture which were double-leaved doors

with repoussé sheets of gold and silver. One of the challenges in building the model was

the door that needed to be opened very gently with light coming through as it opens. The

real door was built with heavy materials and gold. I represented this by using layers of

cardstock and coloring them in gold and having a glossy finish. First, I tried to have the

door and frame in front of the wall, but I was not happy with the way it appears on my

videos, so I placed them behind the wall. In the end, I was able to achieve the elegance

and quality I was looking for.

The other feature in Achaemenid architecture was the water lily or lotus. I used it on the

surfaces of the borders and the boxes placed on top of the capitals. These boxes were

built to carry the borders.

The floor was another significant element in my design. It needed to look magnificent

and glorious. I tried pastel and acrylic to see which one gave me a better look. As a result,

I combined different acrylic colors to make a magnificent reddish and brown color. The

technique I used was splattering the whole paint on the foam with a sponge. I added some

---

[19] Fred S. Kleiner. *Gardner's Art Through the Ages: A Global History* (16th ed.). Boston: Cengage Learning. p. 52. https://en.wikipedia.org/wiki/Protome
[20] Béatrice André-Salvini. *Forgotten Empire: The World of Ancient Persia*. John Curtis, & Nigel Tallis, (eds), University of California Press. 2005. https://en.wikipedia.org/wiki/Persian_column

drawing lines on the floor by using a scoring stylus on the whole floor to look like engraving stones.

Figure 4. Painted Floor

In Persepolis palace, polished stones were used to reflect images. To have the same quality in the walls I tried different materials like metallic silver papers, and different vinyl and color papers. Finally, the silver adhesive craft vinyl roll worked the best.

Choosing the right material for the roof was my final step which would not be seen in the camera and photos, but it affected the space. By using metallic silver corrugated papers for the roof, I've made the same reflection quality as the walls. It reflected the floor and it created a nice outcome with lights since it was corrugated.

Palace Bedrooms

For the bedrooms, it was very important for me to have a different atmosphere from the palace hall. I preferred a place that was more friendly and warmer. I didn't want to bring in that much power and rigidity in the bedrooms. These preferred qualities led me to choose *Isfahani* architecture from the Safavid period with colorful windows, different

geometry, patterns, arches, and symmetrical plans. My design was based on the Persian

Garden (*Baghe Dolat Abad* pavilion) in Yazd.

As I mentioned before, to find a proper pattern and the geometry for interior design and

furniture, I designed different patterns with Vectorworks (a computer-aided drawing

program),

Designing and building the furniture was also a great learning process. Not initially

included in my model, I ended up designing both tables and beds on Vectorworks and

then built them. I created several unsuccessful prototypes before finding one that look

good on the set. For instance, when I made a small bedside table with some elaborate

paintings on it, the camera could not pick up that detail. Since I believed these details

were a crucial part of my design and part of the identity of this architectural style, I didn't

want to ignore them. Therefore, I redesigned and built them several times playing with

color, shape, and scale to find the best qualities for the camera.

Other main elements in the *Isfahani* architecture are *Orsi* doors and windows. These

architectural elements can be described as sash windows and/or vertical sliding doors. In

most of the old Persian houses, the walls of the main room facing the inner garden

contain these *Orsi* doors, which connect the interior rooms with the garden. It is a special

type of window made of wooden lattice and stained glass that has an effective technical

function in climatic and natural light control.

Once I finalized the design of the windows, I cut the patterns out of cardstock to make a

mesh. I used different colors of light filters on the back of the windows to create colorful

shadows on the interior walls and floor.

Alborz and Damavand Peak

Making the outside environment offered a different set of challenges. I needed to show

the enormous scale of the outdoors. This was my first experience creating an outside

environment model with open space and shooting it with the camera.

Since I needed to show the mountains and meadow view in-depth, I began with having

different layers of printed and painted images of the meadow and the mountain. I layered

them to create depth in the set. In the initial model, the wide meadow was not visible

since the sides of the mountain and the meadow were cut. Also, it didn't meet my

expectations very well because I couldn't get the shot I wanted. I needed to expand the

space on the sides by collaging different layers of painted and printed photos. This

allowed for better camera positions.

The sky was another significant element of this outdoor environment. To create the sky, I

first used sanded and khaki color papers for the backdrop and have different lights with

blue gel light filters. Later, I tried to combine some different printed skies which wasn't

very satisfying. Finally, I used a roll of paper, painted in different tones of blue, because

it provided me with the long and wide surrounding area. In addition, I used some

polyester fiber fill to make clouds.

To make the meadow, I first painted the foam green, but the texture was not very

fulfilling. I ended up applying different napkins on the foam and painted them. I used

moss and green sand to make the bushes look realistic.

I was still not satisfied with my initial attempt at making the mountains. After additional

research, I decided to create the mountains out of plaster. I created rock molds in

different sizes and shapes by using aluminum foil. Also, I bought some rock molds for

the smaller sizes. I began by using some cardboard boxes as a foundation for the whole mountain range. Then I added layers of plaster and toilet paper. I used hot glue for assembling and painted the entirety with several coats of acrylic paint. Building and creating the mountain was a long process. but it was worth it. It gave me a nice background.

Painting

Choosing the right kind of paint was vital to my design because the camera picks up different qualities than our eye. For the best result, I conducted a series of tests with different paints and textures under different lighting conditions and photographed them. Acrylic paints and pastels gave me the texture I was looking for and worked well on a camera. I used different acrylic painting techniques to create different textures such as dry brush, washing, and splattering.

Lighting

Finding a good resource for light was one of my initial necessities for the following reasons. First, I knew that the camera required a superior quality of light to achieve the best results since the lighting highlights the actions of the puppets and brings out the texture and color of the set. Second, as discussed previously, successful shadow puppetry is dependent on the correct choice of a light source.

Finally, the theme and mood of the story relied on the effective use of certain lights and color pallets.

Among LED, Halogen, CFL, incandescent, and even natural light, I chose incandescent and LED light to use in different situations. I used book lights, clip lights, and even a cellphone flashlight. In some scenes, I had both incandescent light bulbs and LED lights. I used different cell phones to have various colors of light. Also, I used a cellphone flashlight behind paper to represent the sun in the background for the shadow play.

Finding the right amount of light for taking photos was another essential key. Less light caused some problems. For instance, it didn't show the details of the environment, nor did it illuminate the faces of the puppets. On the contrary, too much light changed the color of the set or displayed some parts that I intended to hide. After some experiments, I finally found out the correct amount of light I needed and how to work with it.
The brightness, color, and angle of the light helped show the different expressions and emotions of the characters. I used different colors of gels to bring the mood to the story. It helped to create the environment I was looking for. For example, I chose reddish-colored light when Sam was angry. At the beginning of the story, I also used colorful gels of blue, red, green, and yellow for the windows to create a friendly and comfortable environment for the room.

Filming

Video

As I mentioned in the project purpose, I aimed to share this project with a lot of people from different parts of the world. I decided the best method to achieve that goal was by streaming the project as a movie online so virtually anyone could access it. This making of a movie became an essential and all-encompassing part of my thesis project. It seemed

45

very challenging and exciting because the scope of my project was a huge undertaking and there was so much to learn as I applied my theater training to every aspect of the project.

The first challenge for me was choosing a good camera and finding the most effective stop motion software for animation and editing. I compared photos from a smartphone and a borrowed DSLR camera. I also decided to use the Stop Motion Studio application for the animation work and the PowerDirector app for the editing.

Working with the DSLR camera was not a great option for me for a couple of reasons. I was interested to learn the workings of this sophisticated camera, but it required a lot of time, so I preferred to use it on the other parts of my project. Furthermore, taking photos and importing them into the stop motion app on the cell phone was more convenient. As a result, I decided to work with a smartphone.

The main challenge I had was finding the right viewpoints for the camera. It took time to find a great position to set the camera to get the perfect view of the scene. To capture a good photo and to have a great composition, I used a couple of tripods and a camera stick in different positions and angles.

To mark my tripod position for each scene, I used masking tape on the floor. It helped me to check the tripod and the camera positions during the recording. Also, if I needed to redo one scene, I had the tripod position.

The other big challenge was to make the puppet and camera movements and transitions smooth and consistent.

Achieving the necessary smoothness requires a high number of individual photos documenting every minute of movement. For instance, for a one-minute video, I needed 300 hundred photos. This process of recording slight movements with several hundred photos was incredibly risky. Sometimes I would find an issue with the scenery or puppet movements which required me to shoot from the beginning again. In stop motion, even the little mistakes could become very visible. Every element of each scene needed to be accurate and repeatable. For instance, one time, at the end of the recording, I found out one of the walls had moved a little. Another example occurred at the start of a filming secession. By touching the cellphone to take photos caused the camera to shake and subsequently led to blurry images. Even by setting a timer, sometimes the focus was not where I had intended, and the results were not satisfying. To avoid these problems, I used a Bluetooth remote controller.

Sound

The next step for me was to find a way how to tell the story literally. In other words, how I wanted to shape the dialogues and conversations. I tried different methods such as; narrations, individual puppets voices, text between the scenes, adding text to the scenes, etc. Due to working at home again, I needed some people to record the dialogues virtually. I tried different approaches. I had my actor friends record their voices to use as puppet voices. I tried using computer voices which seemed interesting at first. I wrote the sentences on google translate and then recorded the speech. After more experimentation, I realized that using my voice to tell the story was ultimately more satisfying. As I mentioned previously in the history section, telling the *Shahnameh* story in Iranian cafés

was a traditional way to keep stories alive from generation to generation. Therefore, I

found narrating more fascinating. Together with my voice narration, I added speech

balloons above the puppets to reinforce the narrative. I received very good feedback

about these choices. To record my voice, I tried different apps to gain the best quality.

Dolby On was my final choice which worked very well.

I used various sound effects like birds and horses, and the voice of a crying child. An

interesting sound challenge was to add an atmosphere of scariness in the Alborz scene

when Zal was abandoned. I tried various typical scary sound effects, but none seemed to

fit. However, changing the speed of one of the sounds (the same sound as nature) was the

solution.

Visual Effects

As the project went forward, I saw the necessity of having other elements in some scenes.

I thought by adding some visual effects could help me to tell the story better. It allowed

me to create an environment that did not physically exist but could describe the context

better, especially the scenes in which symbols played a crucial role.

One of the scenes was Sam's dream. This scene required a whole new way of

storytelling, as it was a visual prophecy, full of symbolism, messages, and raw emotion. I

used shadows for this scene. But even with the shadows, it didn't meet all my

expectations. I came up with ideas to have some visual effects by using some software

and apps. I chose the Motionleap app to create some visual effects. In Sam's dream

scene, I wanted to show the unrealistic, dreamy, and mysterious environment. I wanted

my audience to feel that this scene is different from the others and to invite them to have

a new experience. I used some fiber fill to create clouds that surrounded his bedroom and then added some fog and a camera shake.

Another scene that required special effects was when Simorgh gave her feathers to Zal. This is a magical moment in the story and I wanted to emphasize it. I ended up using visual effects, including colorful overlays and camera zoom movements.

Editing

For the final part of the project, I needed to edit my movie which also is a crucial role in the production and required lots of time and creativity. It is an opportunity to reinforce the purpose of each scene.

I used the PowerDirector app to edit my recordings. First, I reviewed my extensive footage and selected the best shots, and isolated them into a separate folder. Then, I combined these choices into sequences and scenes.

The next key point was finding the best transition from one scene to another. The transitions held the story together and invited audiences to follow the story without interruptions. It gave the movie a great rhythm and intonation. I used different options for transitions like fading the end of scenes, choosing and adding music, and, creating the right breaks in some parts of the scenes by having a blackout.

To produce the final recording, I needed to combine all the components, such as camera footage, dialogue, sound effects, and visual effects. This was the place where all the technical and artistic storytelling united. This was a key role in the post-production process which affected the result.

Documentation

From the beginning, I documented all of my processes and made a documentary movie in addition to my main movie. I did this because I believe it to be beneficial for me and my audience.

This backstage resource allowed me to review my work and have a better view of the whole project. Whenever I faced some obstacles, I was able to go back and see what I had done in similar situations, which in some cases helped me to find a solution. It was also interesting to see my perspective and skills and progress during this process over time.

For the audience, it can be interesting to see behind the scenes; the process of my design, the process of building the sets and puppets, and making the stop motion. In addition, I value sharing my knowledge with other people. I believe this document could also be a good resource for other students who would be interested in making art projects like these. They can see the project process from the first step to the last step and all decisions and changes along the way.

CHAPTER V

CONCLUSION

Producing this project was a great journey for me. Creating, designing, and directing the stop motion movie <u>Zal and Simorgh</u> and making the documentary movie gave me multiple opportunities to learn many new skills as well as to apply the skills and experiences from my three years at the University of Massachusetts Amherst.

Specifically, my hands-on experiences in the scene shop and learning about theater technology and the production process, my scenic design experiences, and my work in text analysis provided me with the skills and knowledge base from which to build. I was able to:

- Conceive, develop, and complete an original storytelling project at the height of the pandemic.
- Develop a process to organize and clarify this enormous project, thanks to project management.
- Work with many new materials and tools.
- Conceptualize, design, and fabricate multiple detailed scenes.
- Use text analysis effectively. I broke the scenes into smaller parts and found out how each part contribute to the whole play. I've found out the effect and theme of the play and in what way I wanted to deliver my story. It clarified the story points, the time, and the place of the story. It showed me what I would like to develop in

my project and helped me to research and analyze the main materials and resources needed for this project.

Achieving so much within the limitations and boundaries of the pandemic was an incredible period of growth, inspiration, and sharing of stories, culture, and passion.

Finally, I believe by following all the project management steps I was able to make this ambitious project happen. To refer to the Deming Cycle;

- Plan: I planned the whole project by doing a Gantt chart and created multiple schematics of all the details for my project in advance. I identified the project and predicted challenges, risks, and obstacles. I experimented with mockups and prototyping and gained insights through many mistakes and successes.

- Do: I produced and executed what I planned based on knowledge learned from thorough planning and experimentation.

- Reflect: I documented and reviewed my work extensively through still and moving images, research, and drafting. I looked for ways to improve the effectiveness of each detail as well as the overall project.

- Change: I identified which changes I saw as necessary and implemented the best solutions, finalizing all the details of my storytelling of scenic elements, puppet movement, fluidness, and effective storytelling.

Through this constant process of Plan-Do-Reflect-Change, I was able to produce a work of art and storytelling that displays what I've learned at the University of Massachusetts Amherst Theater Department. Perhaps more importantly, though, it

displays how my education has given me the tools to continue to grow as an artist, scholar, and contributor to a better world.

The End

APPENDIX A

RESEARCH

Sa'd ibn Abi Waqqas leads the armies of the Rashidun Caliphate during the Battle of al-Qadisiyyah from a manuscript of the Iranian epic book, Shahnameh in Persian script
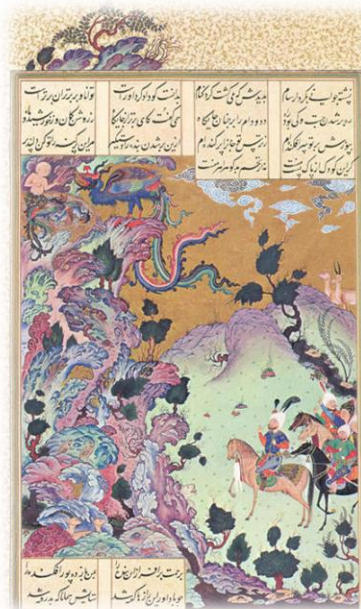
Sam finds Zal in the simorgh's nest
Tahmasp (Houghton) manuscript
Private collection Lyons, France

Zal visits Rudaba, Persian miniature
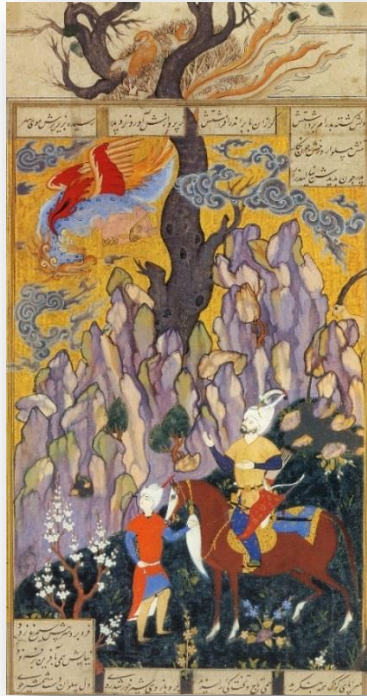
Sam finds Zal in the Simorgh's nest
Tahmasp (Houghton) manuscript
Private collection Lyons, France
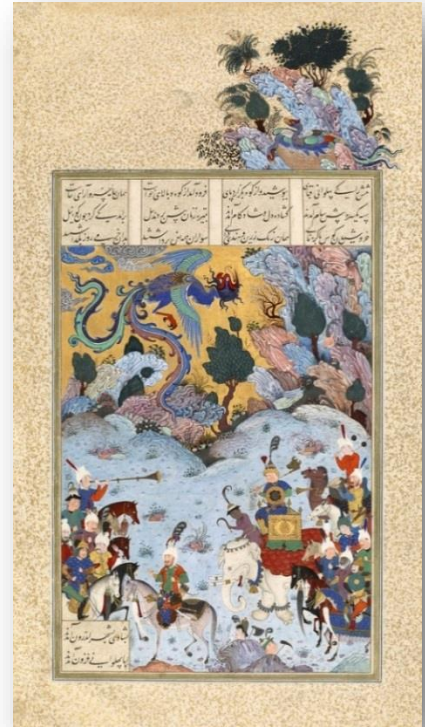
Sam Returns With His Son Zal, from a Shahnama
(Book of Kings) by Firdawsi (d.1020), Tabriz,
Iran. 1520s. Opaque watercolor, gold and ink on
paper / Ebrahimi Family Collection, ELS2010.7.2
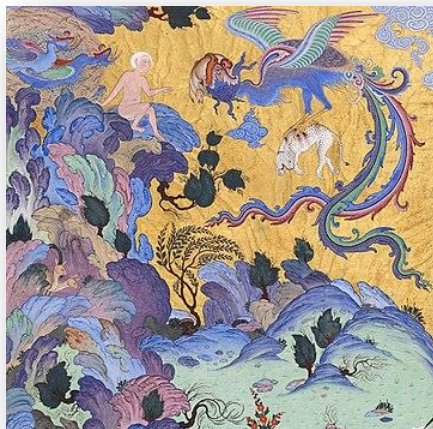
Zal is Sighted by a Caravan (LTS1995.2.46)
Part of Shahnameh of Shah Tahmasp,
Attributed to Abd al-Aziz

Zal is hunting, Part of Shahnameh, Fitzwilliam
Museum, The Royal Asiatic Society of Great
Britain and Ireland

APPENDIX B

SCENE BREAK DOWN

<table>
<tr><td colspan="6">Shahnameh- Zal and Simorgh</td></tr>
<tr><td colspan="6">The story is divided into two sections:
Episode 1: Zal's birth; Rising in Alborz mountain; Getting back to the palace
Episode 2: Starting to study; Meeting Mihrab; Falling in love with Rudabeh; Meeting with King Manouchehr; Getting married to Rudabeh</td></tr>
<tr><td colspan="6">Act 1. The Birth of Zal</td></tr>
<tr><td>SCENE</td><td>CHARACTER</td><td>PLACE</td><td>TIME</td><td>SET</td><td>NOTES</td></tr>
<tr><td>1) The Birth of the Zal</td><td>Courtier Women, Zal's mother, Zal</td><td>Palace in Sistan, Shabestan (inner sanctums)</td><td>No time mentioned</td><td>Shabestan Architecture</td><td></td></tr>
<tr><td colspan="6">ACTION</td></tr>
<tr><td colspan="6">Sam has been waiting for a long time for a child. Zal is born but he is with white hair. Women in a palace have challenges to tell Sam.</td></tr>
<tr><td>SCENE</td><td>CHARACTER</td><td>PLACE</td><td>TIME</td><td>SET</td><td>NOTES</td></tr>
<tr><td>2) Nany informs Sam</td><td>Courtier Women, Sam</td><td>Palace, Shabestan House of women</td><td></td><td>Royal seat, throne</td><td></td></tr>
<tr><td colspan="6">ACTION</td></tr>
<tr><td colspan="6">Finally, after one week, one of the courtier women has the courage to tell Sam about his son. Sam after talking to her, goes inside the house to see his son. When he sees his son with white hair, He yells to the sky and talks to god. He asks what sins he has done to see this consequence. He doesn't accept his son and he decides to abandon him.</td></tr>
</table>

SCENE	CHARACTER	PLACE	TIME	SET	NOTES
3) Sam orders soldiers to leave Zal in Alborz	Sam and his army	Alborz mountain		Simorgh's nest in Alborz mountain	They go to the mountain by horses
ACTION					
The soldiers leave Zal in Alborz Mountain under Simorgh's nest.					

SCENE	CHARACTER	PLACE	TIME	SET	NOTES
4) Simorgh finds Zal and raises him	Simorgh, Zal	Alborz mountain		meadow	Showing Simorgh raises Zal
ACTION					
Simorgh hears the infant's cry. She brings him to her nest and looks after him. Zal is raised by Simorgh and becomes a strong and champion man.					

SCENE	CHARACTER	PLACE	TIME	SET	NOTES
5) Sam has a nightmare	Sam, Mobedan	palace		Bedroom, Meeting room	
ACTION					
Some years later, Sam has a nightmare and asks the Mobedan to tell him the meaning of it. They told him it was because of how badly he has behaved towards his son and that he needs to find him and apologize to him. Sam feels remorse and sets out to the Alborz mountains to see if his son might still be alive.					

SCENE	CHARACTER	PLACE	TIME	SET	NOTES
6) Sam finds Zal	Zal, Simorgh, Sam, and his soldiers	Alborz mountain			
ACTION					
Sam finds his son a grown handsome young man, well brought up by the bird. Zal doesn't want to leave Simorgh, but she gives three feathers of her to him and tells him if he is ever in trouble, he must burn the feather and she will come to his aid.					

APPENDIX C

STORYLINE

STORY IN CHART

Location of The Play: Ancient Persia, Current Iran and Afghanistan

| The birth of Zal | → | Nany informs Sam about Zal | → | Sam asks soldiers to abandon Zal in Alborz mountain | → | Simorgh finds Zal and brings him to her nest | → |

| Simorgh raises Zal | → | Sam has a nightmare about Zal | → | Sam asks the Mobedan about the dream | → | Sam and his soldiers go to Alborz to find Zal | → |

| Sam talks to Simorgh to bring Zal back | → | Simorgh talks to Zal and gives him her feathers | → | Sam and Zal meet each other | → | Sam and Zal get back to the palace together |

IMPORTANT LOCATIONS:
The Sam's Palace
Alborz Mountain
King Manouchehr's Palace
Kabul (out of the city)
Mehrab's Palace
River and Rose Garden
Rudabeh's Bedroom

SYMBOLISM
Simorgh: symbol of wisdom, majestic, powerful, supportive
Simorgh feather: power, healing power, protective
Rose garden: love, caring
Six questions from Zal: each of them has some points about the world

THEMES
Power
Discrimination
Love
Hate
Magic
Forgiveness

Painting Resources
Ancient books: Shahnameh Shah Tahmasp, Shahnameh Shah Ismail II by Abu'l Qasim Firdausi
Ancient paintings: Painting by Qadimi, Abdul Aziz, Muhammad Zaman
Persian rugs: Kurds, Bakhtiari & Luri, Chahar Mahal, Qashqai & Khamseh, Afshari, Beluch
Persian Gardens: Dulat abad garden, Eram gardan, Chehel soton garden, Fin garden

Family Tree

```
                                    ┌──────────┐
                                    │  Zahhak  │
                                    └────┬─────┘
                                         ┊
  ┌──────────┐              ┌──────────────┐              ┌──────────────┐
  │   Sām    │              │    Mehrab    │┄┄┄┄┄┄┄┄┄┄┄┄┄┄│   Sindukht   │
  └────┬─────┘              │    Kaboli    │              └──────────────┘
       │                    └──────┬───────┘
       │                           ┊
  ┌────┴─────┐              ┌──────┴───────┐
  │   Zāl    │┄┄┄┄┄┄┄┄┄┄┄┄┄┄│   Rudaabeh   │
  └──────────┘     ┊        └──────────────┘
                   ┊
             ┌─────┴──────┐
             │   Rostam   │
             └────────────┘
```
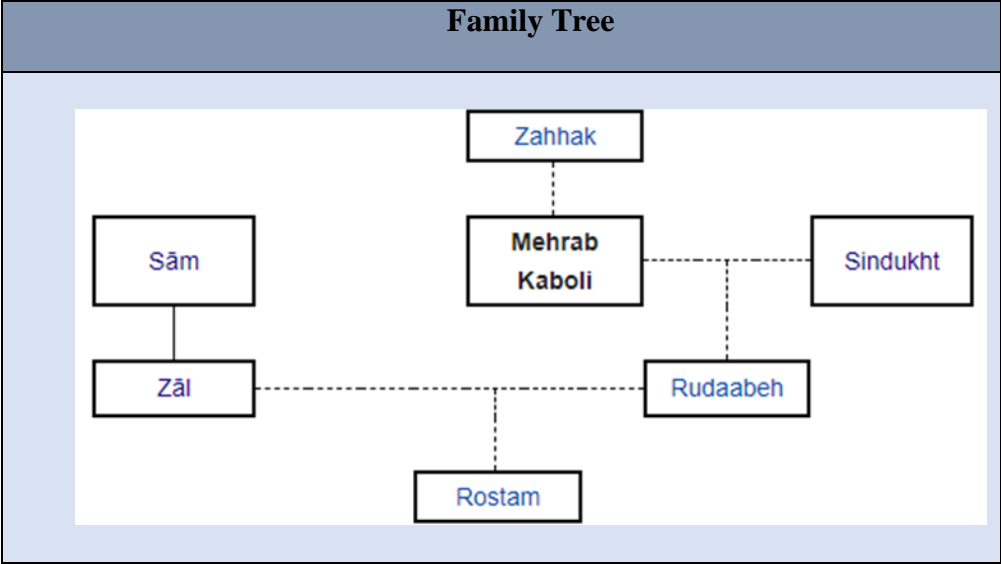
PRODUCTION INFORMATION

NUMBER OF SETS		
Places	**Sam's Palace Interior**	**Alborz Mountain Exterior**
	Five rooms: • Zal's birth room • Sam's bedroom • Sam's bedroom in a dream • Sam's palace hall • Sam's meeting room(shadow)	Five different mountains and plains: • Where Zal's abounded • Where Zal's raised by Simorgh • Where the soldiers are looking for Zal • Where Simorgh gives her feathers to Zal(shadow) • Where Sam meets Zal
Total	10 locations	

NUMBER OF PUPPETS REQUIRED			
Puppets Characters	**Articulated Puppets**	**Shadow Puppets**	**Total**
Sam	2	1	3
Zal (Infants)	1	1	2
Nany	1	-	1
Maids	3	-	3
Soldiers	4	4	8
Simorgh	3	1	4
Mobedan	-	3	3
Zal (Adult)	2	1	3
Musicians and Guests	10	-	10
Horses	4	2	6
Total	30	13	43

APPENDIX F

STORYBOARD

INITIAL STORYBOARD[21]

| 1. The Birth of Zal | 2. Zal 's abandoned in Alborz Mountain | 3. Simorgh decides to Look After The Zal | 4. Zal is raised by Simorgh |
| 5. Zal's raised by Simorgh and becomes a young man | 6. Sam has a dream and talks to Mobedan | 7. Sam goes to Alborz to find Zal | 8. Zal gets back to his father and palace |

---
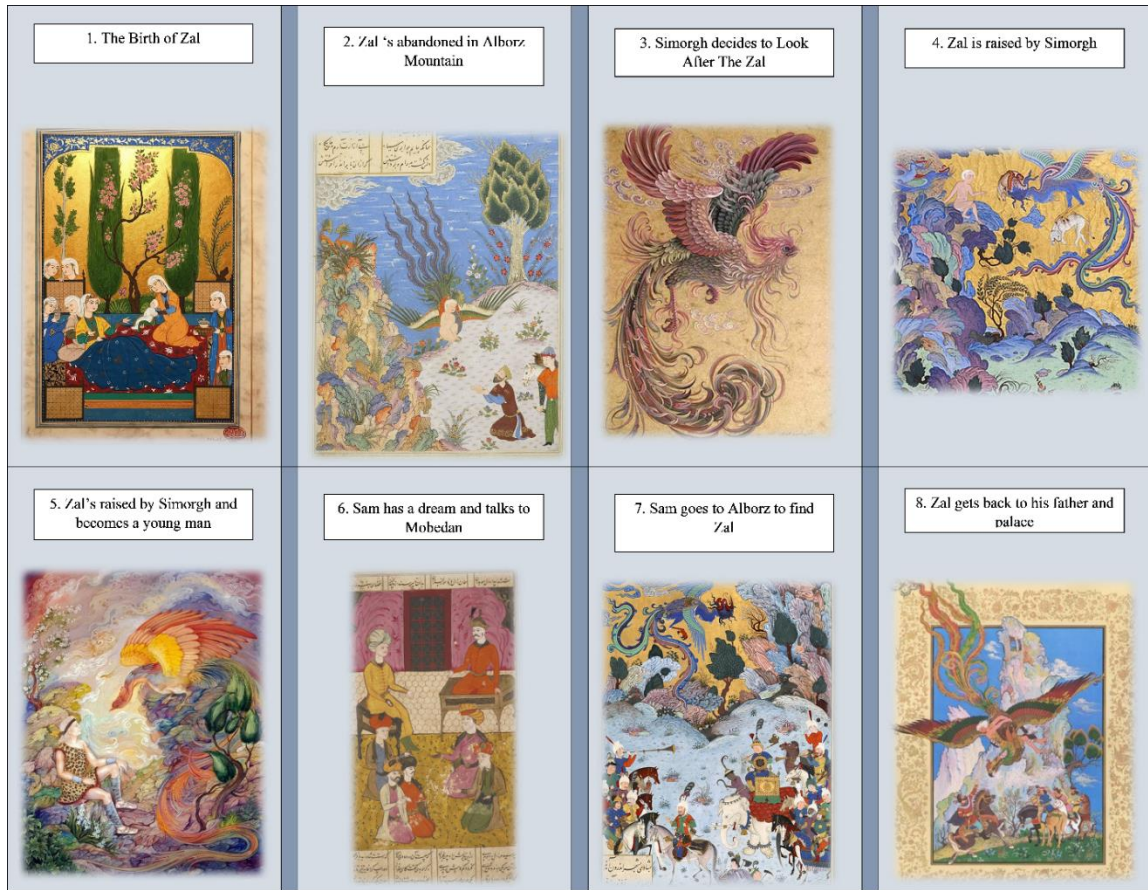
[21] All images are from different Shahnameh (Book of Kings) prints, Abu'l Qasim Firdausi

PRELIMINARY STORYBOARD
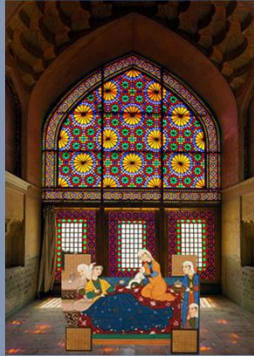
1. The Birth of Zal	2. Nany informs Sam about Zal	3. Zal 's abandoned in Alborz Mountain

4. Simorgh decides to raise Zal	5. Zal's raised by Simorgh and becomes a young man	6. Sam has a nightmare
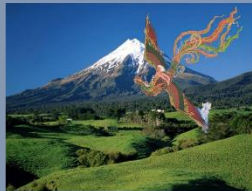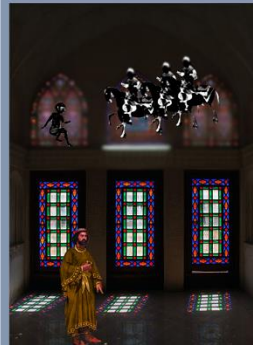
7. Sam talks to Mobedan	8. Sam goes to Alborz to find Zal	9. Zal gets back to palace

FINAL STORYBOARD
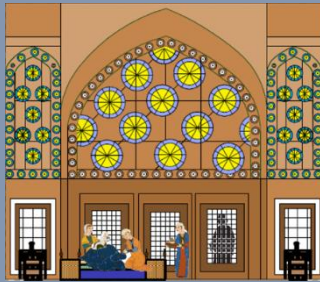
1. The Birth of Zal	2. Nany informs Sam about Zal	3. Zal's abandoned in Alborz Mountain
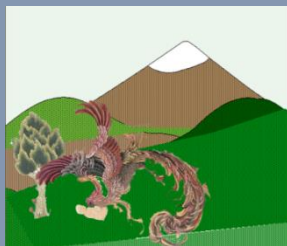
4. Simorgh finds Zal	5. Simorgh decides to raise Zal	6. Zal's raised by Simorgh and becomes a young man
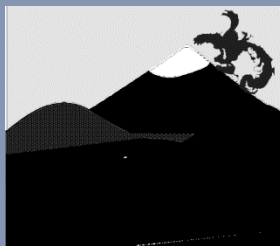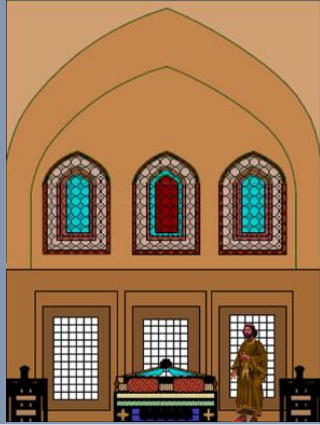
7. Sam has a nightmare	8. Sam has a nightmare	9. Sam sees a young man in his dream

10. Sam talks to Mobedan	11. Sam goes to Alborz to find Zal	12. Simorgh talks to Zal to persuade him to get back to the palace

13- Simorgh brings Zal to Sam	14. Sam and Zal meet each other	15. Zal gets back to the palace
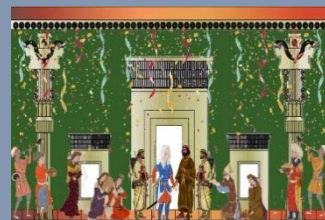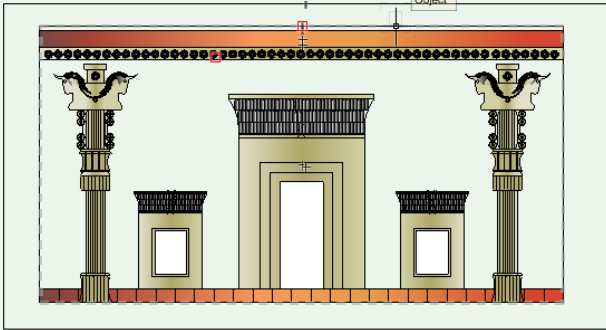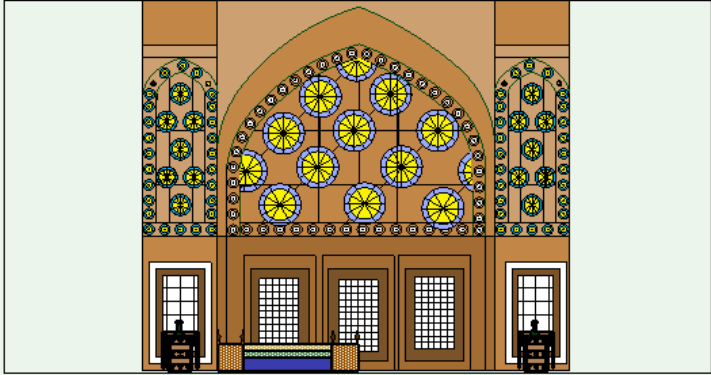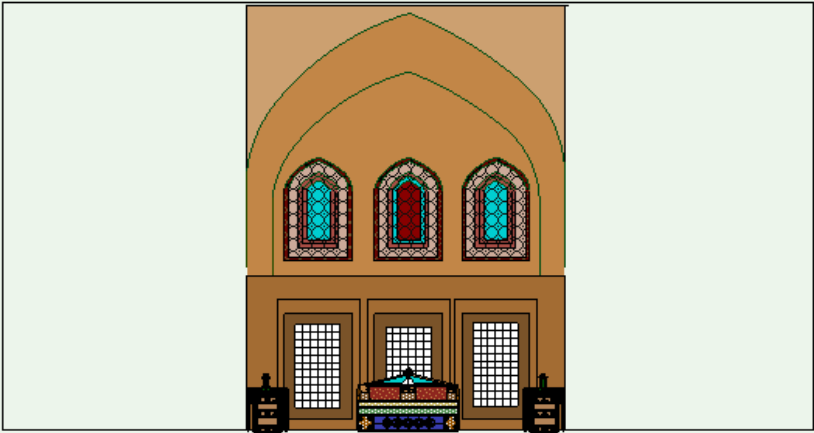
DESIGN SKETCHES

	Palace hall
	Bedroom I
	Bedroom II

	Bedroom II Side walls
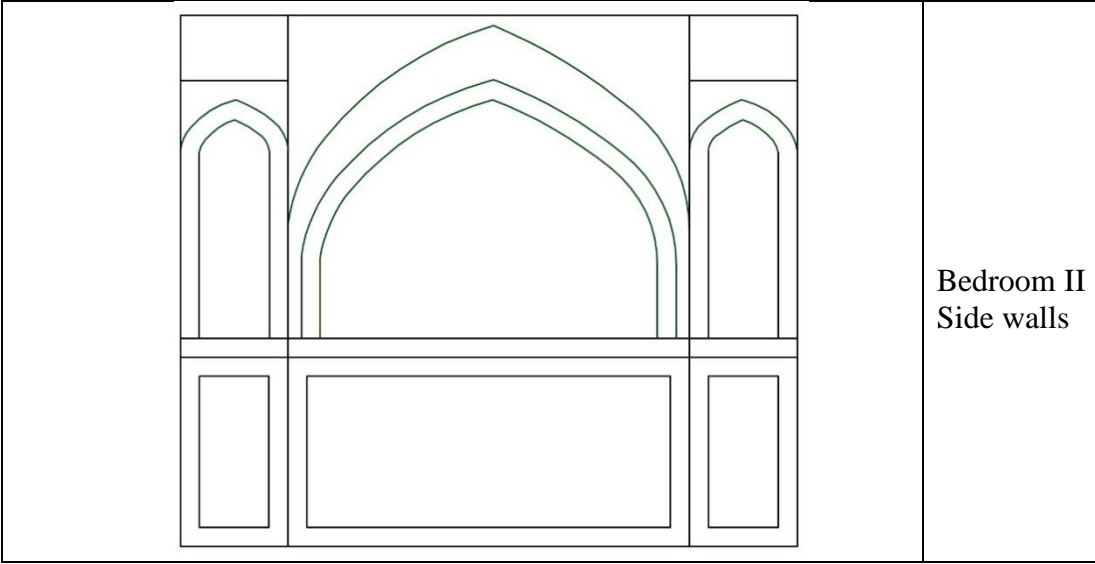
DECORATIVE DESIGN
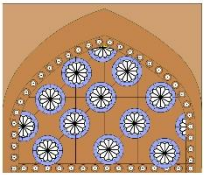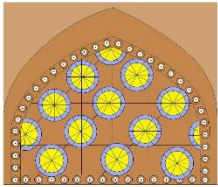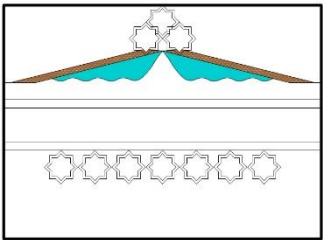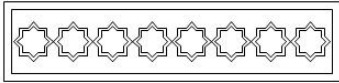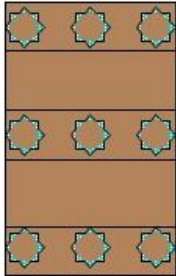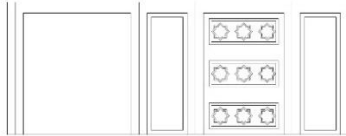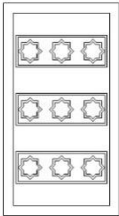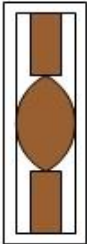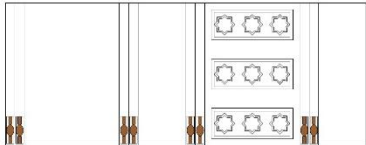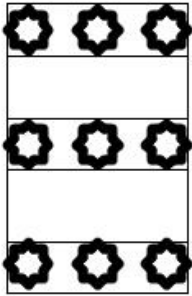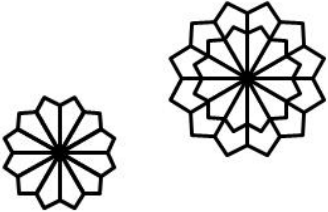
These are the elements I design and use in interior rooms and furniture.		
Windows	Windows	Windows
Bed Decoration	Bed Decoration	Bed Decoration
Table Decoration	Table Decoration	Table Decoration
Table Decoration	Table Decoration	Table Decoration

Table decoration	Windows decoration	Wall decoration

SCENERY DESIGN PROCESS

ALBORZ MOUNTAIN

BEDROOM SAMPLE

PALACE HALL

ALBORZ MOUNTAIN DESIGN PROCESS

RESEARCH IMAGE

INITIAL MODEL

PRELIMINARY MODEL

FINAL MODEL

FINAL MODEL

FINAL MODEL

72

BEDROOM SAMPLE DESIGN PROCESS

RESEARCH IMAGE

INITIAL MODEL

FINAL MODEL

RESEARCH IMAGE

INITIAL MODEL

PRELIMINARY MODEL

FINAL MODEL
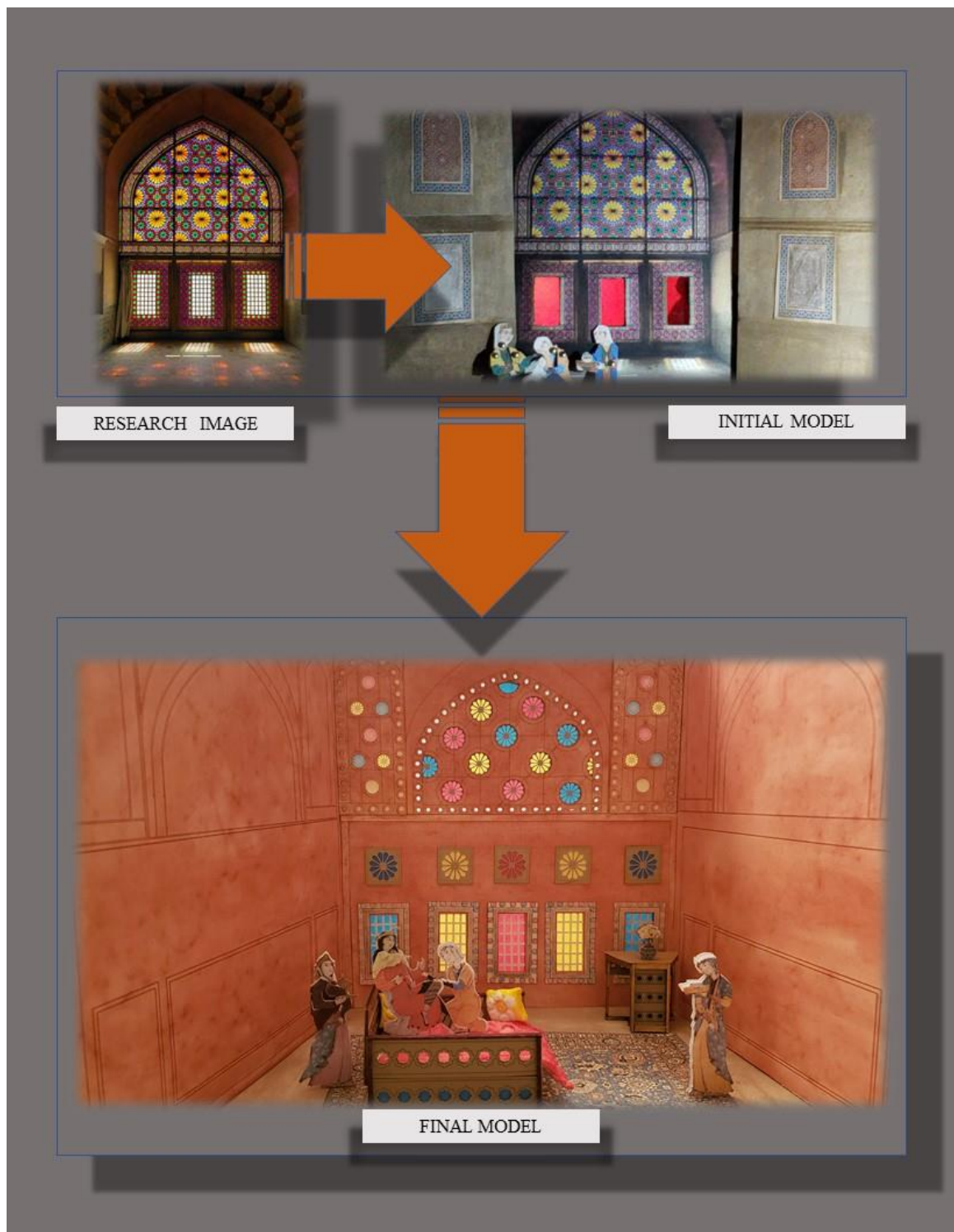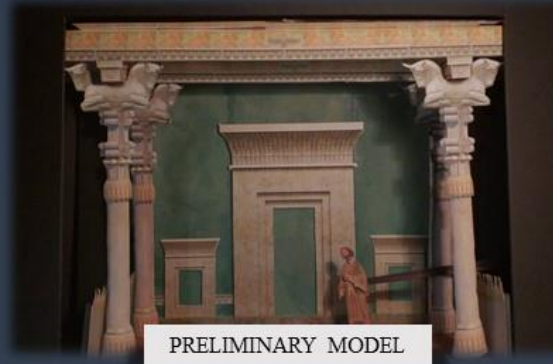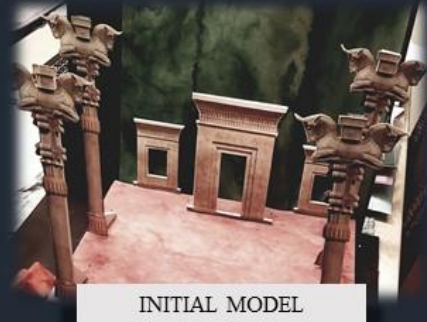
PUPPETS DESIGN

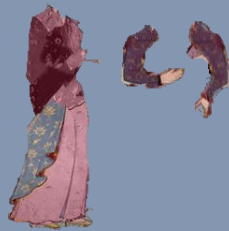|	
	Sam, He is the son of Nariman, grandson of Garshasp, and father to Zāl. He is Iran's champion during the rule of Fereydoun, Manuchehr, and Nowzar.
	Zal, He is the son of Sām and the grandson of Nariman. He is a legendary Iranian king from Sistan and is recognized as one of the greatest warriors of Iran
	Simorgh, She is a wise bird who is the essence of purity that can heal any illness or wound.

	Zal's mother
	Nany
	Maids

	Servants
	Soldiers
	Musicians

77

PUPPET PARTS ASSEMBLY - SAMPLE

1

RESEARCH

2

3

FIRST CUSTOM CHOICE

SECOND CUSTOM CHOICE

4

FACE &HEAD

5

FINAL DESIGN

6

FIRST HEADWEAR CHOICE

7

SECOND HEADWEAR CHOICE

8

SIMORGH CHARACTER DESIGN PROCESS

ANCIENT TILE

ADDING COLOR

ISOLATED FROM BACKGROUND

FINAL PRODUCT
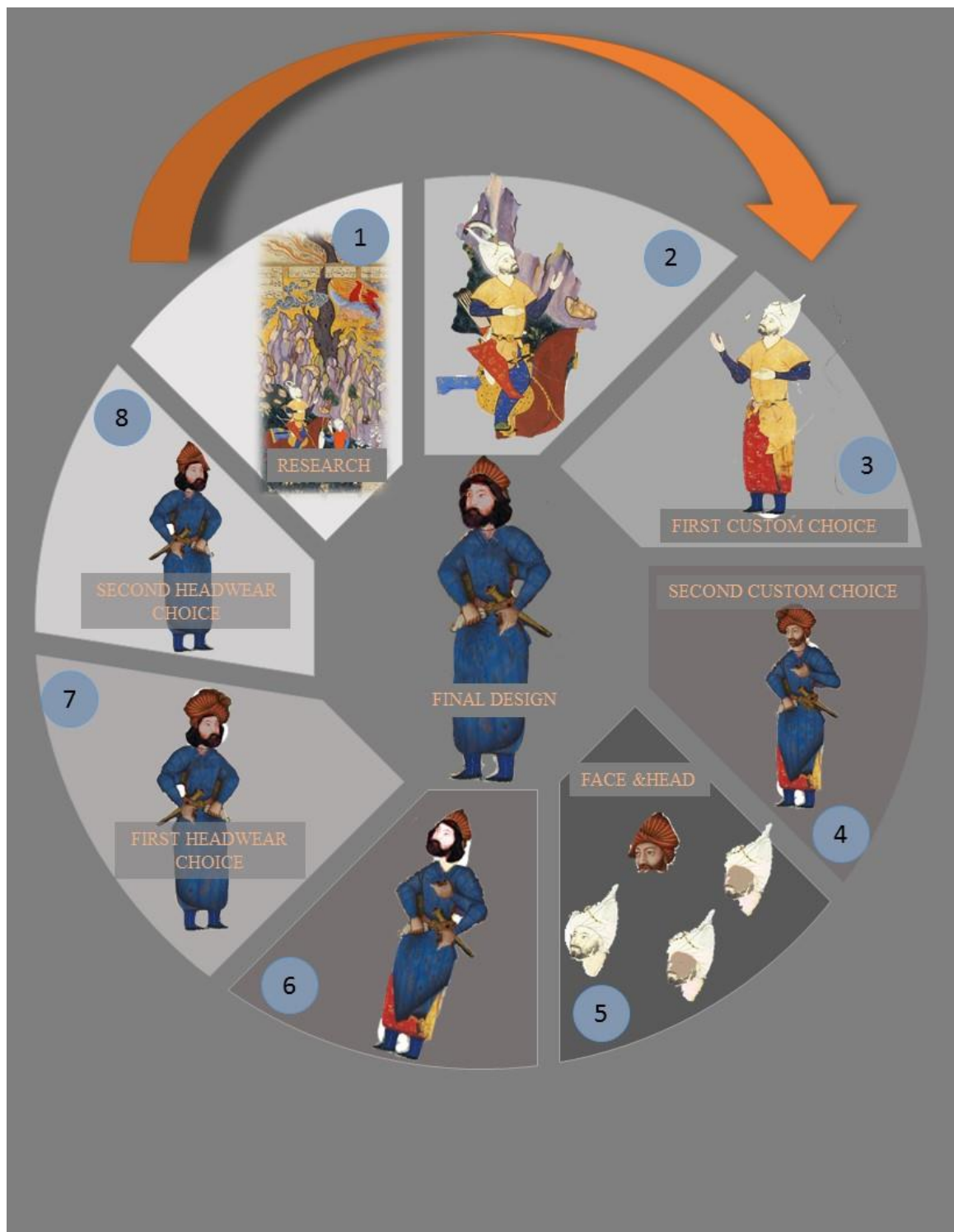
APPENDIX K

PRODUCTION PHOTOS

APPENDIX L

BEHIND THE SCENES PHOTOS

BIBLIOGRAPHY

"Abdollah Alimorad, Puppetry Workshop."
    https://www.facebook.com/alimorad.abdollah

"Achaemenid Architecture." https://en.wikipedia.org/wiki/Achaemenid_architecture

André-Salvini, B. *Forgotten Empire: The World of Ancient Persia*. University of
    California Press. 2005.
    https://en.wikipedia.org/wiki/Achaemenid_architecture
    https://en.wikipedia.org/wiki/Persian_column

"Ballard Institute and Museum - University of Connecticut"
    https://bimp.uconn.edu/

Beyzaie, Bahram. *Namayesh dar Iran* [A Study on Iranian Theatre]. Tehran:
    Roshangaran, 2000.

"Bahram Beyzaie and the Shahnameh, Stanford Iranian Studies Program."
    https://www.youtube.com/@StanfordIranianStudiesProgram

Boardman, J. *Persia and the West: An Archaeological Investigation of the Genesis of
    Achaemenid Art*. Thames & Hudson. 2000. 102-122.

"Creating Articulated Paper Dolls." KS Productions TV channel.
    https://www.youtube.com/watch?v=KKr-wwERRWo&t=294s

Davis, D. "Women in Shahnameh." in *Women and Medieval Epic: Gender, Genre and
    the Limits of Epic Masculinity,* edited by Sara S. Poor and Jane K. Schulman
    (Palgrave MacMillan: 2007). 67-90.
     https://asia-archive.si.edu/women-in-persian-manuscripts/

"Eric Wright Puppet Channel." Puppet Kitchen Channel.
    https://www.youtube.com/@PuppetKitchen

Ferdawsi, Abolqasem. *Shahnama*: 1000 Years of the Persian Book of Kings brochure.
    "Sam Returns with His Son Zal." Ebrahimi Family Collection. Iran, Tabriz,
    Safavid period, ca. 1520s, Opaque watercolor, ink, and gold on paper.
    https://asia-archive.si.edu/learn/shahnama/els2010-2-7/

Ferdawsi, Abolqasem. *The Shahnameh: The Persian Book of Kings*, translated by Dick Davis (New York: Viking Penguin, 2006).

Ferdousi. *Shahnameh*. 1010

Ferdowsi. *Ghavam Shahnameh*. Safavid, A.D. 1562–83 (A.H. 970–91).

Ferdowsi. *Ismail II Shahnameh*. Aga Khan Museum. 1576-77

Ferdowsi. *Shahnameh of Shah Ismail II*. "Zal returned to Sam by the Simurgh." Folio from the Shahnameh of Shah Ismail II. Ascribed to Sadiqi Beg. Qazvin, 1576-77. Reza Abbasi Museum.

Ferdowsi, *Mohammad Jouki Shahnameh*. Herat, Patron: Mohammad Juki b. Shah Rokh, London, Royal Asiatic Society, Persian. c.1444

Ferdowsi. *Shahnameh*. "The Simurgh restores Zal to Sam." Herat, Patron: Mohammad Juki b. Shah Rokh, Opaque watercolor, ink and gold on paper, London, Royal Asiatic Society, Persian. c.1444

Ferdowsi, *Safavid Shahnameh. The Shahnama of Shah Tahmasp*. Metropolitan Museum of Art. 1524–76

Ferdowsi. *Shahnameh*. An illustrated and illuminated leaf from a manuscript of Firdausi's Shahnameh, Persia, Safavid, third quarter 16th century.

Ferdowsi. *Shahnameh*. Safavid: Shiraz, c.1590–1595, London, British Library.

Ferdowsi. *Shahnameh (Book of Kings).* "Prince Zal and the bird Simurgh." Detail, from a miniature. Persian, 1428.Gouache on paper. New Delhi, National Museum of India.

Ferdowsi. *Shahnameh (Book of Kings).* "Siavush Marries Farangis." Painting by Mu'in Musavvir, Persian, 1638 - ca. 1698.

Ferdowsi. *Shahnameh (Book of Kings). "*Sîmurgh." The fourth quarter of the 16th century, Qazvin, museum of art and history of Geneva. Gold on paper.

Ferdowsi. *Shah Tahmasp Shahnameh*. "The birth of Zal." Attributed to Mir Mosavvar, 1530, Tehran Museum of Contemporary Art.

Ferdowsi. *Shahnameh*. "The dying Esfandiyar watched by Rostam and Zal." Safavid: Qazvin, c.1585, Opaque watercolor, ink and gold on paper, Windsor, The Royal Collection. https://shahnameh.fitzmuseum.cam.ac.uk/

Ferdowsi. *Shahnameh*. "The Simorgh heals Rakhsh." Safavid: Shiraz, c.1590–1595, Opaque watercolor, ink and gold on paper, London, British Library. https://shahnameh.fitzmuseum.cam.ac.uk/

Ferdowsi. *Shahnameh*. Golestan Palace. "The Sitting Woman." Unknown artist,17 century, Tehran, Iran.

Ferdowsi. *Shahnameh (The Epic of Kings)*. Translated by Helen Zimmern. Iran Chamber Society, MIT, 1883.

Firdausi, Abu'l Qasim. *Shahthamsab Shahnameh*, The Metropolitan Museum of Art.

Firdausi, Abu'l Qasim. *Shahnama (Book of Kings) of Shah Tahmasp.* Iran, Tabriz, Safavid period, ca. 1525, Lent by the Art and History Collection. Artist: Painting attributed to Abdul Aziz.

Firdausi, Abu'l Qasim. *Shahnama (Book of Kings) of Shah Tahmasp*. Artist: Painting attributed to 'Abd al-Vahhab, Date: ca. 1525–30.

Firdausi, Abu'l Qasim. *Shahnama (Book of Kings) of Shah Tahmasp*. Painting attributed to Mohammad Ghadimi Gilani, (Qadimi) (active ca. 1525–65), Object Name: Folio from an illustrated manuscript, Date: 1525.

Firdawsi. *Shahnama*. Folio; "The Khaqan's Daughter Arrives at Nushirwan's Palace," Date Created: circa 1590-1600, Location: Iran, Arthur M. Sackler Gallery.

Firdausi. *Shahnameh*. "Simurgh and Zal." Persian Miniature. 15th C, Persian poet, c.940 – 1020. Works completed in 1014.

Firdausi. *the Book of Kings (Shahnama)*. "The Simurgh Carries Zal to Her Nest." painter: Attributed to Sadiqi Beg (1533–1610), Kazvin. Chester Beatty Library, Dublin.

Ghahremani, Homa A. "*Simorgh: An Old Persian Fairy Tale*". Sunrise Magazine 1984 (June/July).

"Interview with Mojdeh Kia, Miniature Set Designer." https://istanama.com

"Interview with Alireza Owji, the Character Designer." https://istanama.com

Kleiner, Fred S. (2018). *Gardner's Art Through the Ages: A Global History* (16th ed.). Boston: Cengage Learning. p. 52. https://en.wikipedia.org/wiki/Protome

"Mathematics Persian Architecture." https://muslimheritage.com/mathematics-persian-architecture/

"Miniature." https://salamshop.org/blog/miniature

Nizami. *Khamsah (*Five Poems). "Bahram Gur Proves His Worthiness by Killing a Dragon and Recovering Treasure from A Cave." Painting by Safavid artist, Muhammad Zaman dated 1675/76. The British Library's Persian Manuscripts.

"Norbert Götz Shadow Theatre Workshop." https://www.youtube.com/@norbertgotz9594

"Nori Sawa's Puppet Arts Workshop." https://www.youtube.com/watch?v=kZswZqiZ5RQ

Pirnia, M. Karim. *Sabk Shenasi Mi'mari Irani* (Study of Styles in Iranian Architecture), Sorosh Danesh Press,2005. https://en.wikipedia.org/wiki/Iranian_architecture

"Persepolis." UNESCO World Heritage Centre (2006). "Pasargadae". Archived from the original on 5 March 2020. Retrieved 26 December 2010. https://en.wikipedia.org/wiki/Persepolis

"Persian Painting." https://www.flickr.com/photos/persianpainting

Safa, Zabihollah. *Hamāseh-sarāyi dar Irān.* Tehran, Amir Kabir Press, 2000.

Schmidt, Hanns-Peter (2003). "Simorg". *Encyclopedia Iranica*. Costa Mesa: Mazda Pub.

"Shahnameh." https://www.ancient.eu/shahnameh/

"Shahnameh." https://shahnameh.fitzmuseum.cam.ac.uk/

"Shahnameh Heroes." https://www.heritageinstitute.com/zoroastrianism/shahnameh/heros.htm

"The Tale of Zal and Rudabeh, Shahnameh Reading Project." http://imakeupworlds.com/index.php/2016/02/the-tale-of-zal-and-rudabeh-shahnameh-reading-project-7/

"Thousand Years of the Persian Book." https://www.loc.gov/exhibits/thousand-years-of-the-persian-book/epic-of-shahnameh.html

"Zoroastrianism-Shahnameh-Heros."
http://www.heritageinstitute.com/zoroastrianism/shahnameh/heros.htm

Woodburn, Bill. Shadow Puppets; Designing, Building, and Performing.
https://www.sagecraft.com/puppetry/definitions/shadow.html