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# Sculpting Fantasy Realism Creatures of the Desert

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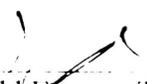
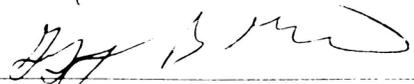
Sculpting Fantasy Realism Creatures of the Desert

A thesis/dissertation  
presented to  
the faculty of the Department of  
Fine and Performing Arts Honors College  
East Tennessee State University

In partial fulfillment  
of the requirements for the degree  
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by  
Peter Bradley Eisenbrey

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**Abstract**

Creature design and sculpture is about representing life with three dimensions. To begin designing a creature, the process begins by looking at real life. Studies of existing wildlife and anatomy reference provided the foundation for the creation process. The goal of this project was to study creature design and attempt creating feasible results. The background and location origin of these creatures are based on the environmental location of Arizona. The goal was creating and rendering four creatures with the attempt of achieving fantasy realism.

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## **Introduction**

Creature design is about taking a brief description and making associations between real life and the concept. The description could be as simple as wanting to have a predatory animal that lives in the rainforest and stalks prey from the trees. The start to any project should be research and exploration. To make a creature that fits the environment, you should take knowledge of adaptations and associate that information to how life as we know it works. A fish isn't going to suddenly be living on land if it is still dependent on fins and instead may need legs or wings to surface the water. "A well-designed creature, no matter how unearthly, draws inspiration from its earthly counterparts" (Thacker, 2017). The challenge of the project was to explore creature design as well as the process of sculpting at a higher level of detail for fantasy creatures. To define the scope of detailed fantasy realism sculpting, objectives were set with the creatures. The details were to be based on anatomy and real-life structures such as bones, muscles, and skin. Setting the brief began with deciding the location, Arizona specifically the desert and the canyon that crosses through the area (Arizona Experience, 2018). At the minimum, details that I wanted to test my sculpting ability with included feathers, rocks, and muscles. Thus, I began drawing concepts for the four creatures in mind.

## **The Creatures**

The first creature I started to sketch was an owl, and immediately realized that my problem was going to be pushing the features to make it unique. I originally tried to add rocks and crystals to it, and accessorize its adornments but I realized that the problem lay with its silhouette. More importantly, the accessories themselves did not explain themselves in terms of adaptation. I decided to try pushing the concept by combining the features of a lizard providing it with more

of a coldhearted predator appearance. The next creature was to be based on rocks and minerals, so I combined those elements with the features of a crab. This brings me to the point that I made decisions concerning the design of creatures using wild life that was not always native to Arizona such as crabs (nps, 2015). When integrating other creatures, the focal point of the design is what had to fit the brief in my mind. For example, the emphasis of the crab mineral creature is its geologic and rocky features, if crabs ever habituated the area then I imagine this evolution chain could be possible. The idea of integrating plant life and wild life has always intrigued me and to make it fit the brief I created an armadillo that uses cactus as both camouflage and as a trap for prey. The last concept was touching more the idea that a parasitic creature could be hunting for nourishment and fluids from its prey and that creature was meant to challenge silhouette and the interaction of two creatures in a sculpture. To further develop the design process, I expanded the description for each creature.

#### Crab-Mineral Creature

Exoskeleton is reinforced by the minerals consumed. These creatures are said to be responsible for excavating large tunnels as it consumes debris in search of rare gems. The gems this creature collects are placed along ducts within the creature's cheeks that are displayed during mating season.

#### Owl-Lizard Creature

Stalking its prey from above, this creature feeds on insects and small critters. Its scaly body provides protection from the heat while at the same time, its feathers are capable of absorbing heat warmth through the night. It is said that this creature only sleeps three to four hours as this creature is always on the prowl in search of a meal.

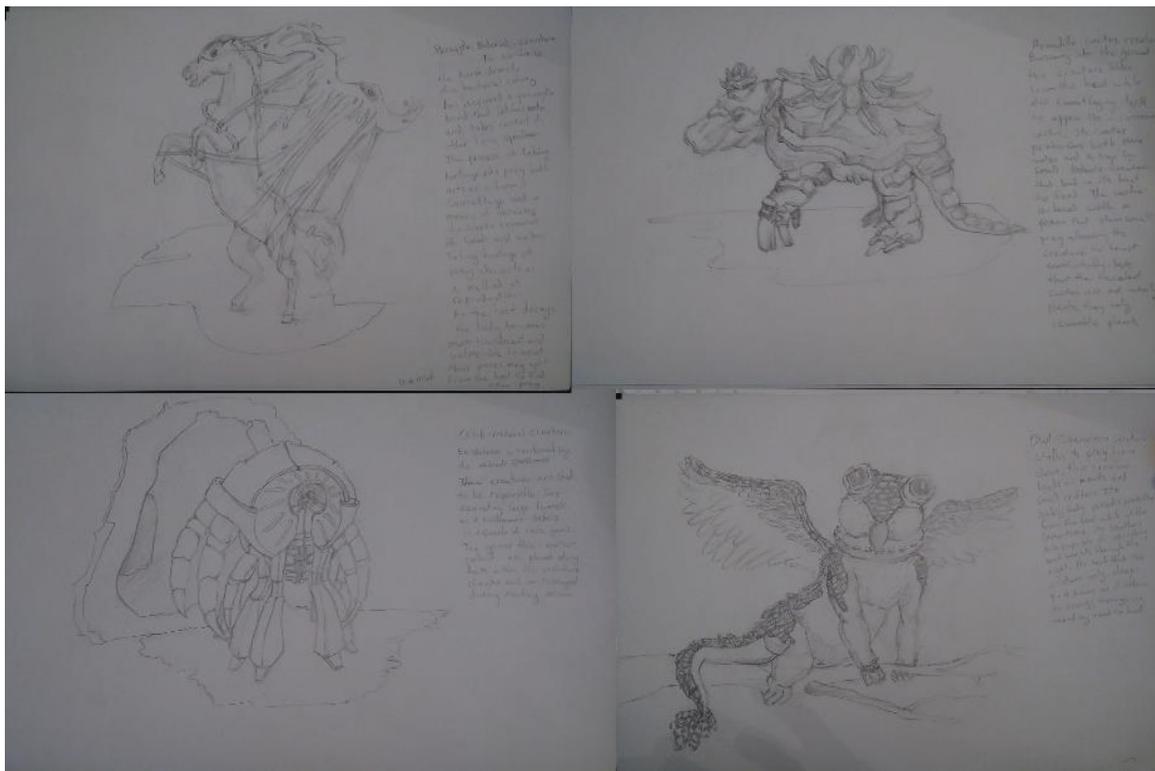
#### Parasitic Bacterial Creature

To survive in the harsh desert, this bacterial colony has acquired a parasitic bond that latches onto and takes control of another living specimen. The process of taking hostage of its prey both acts as a form of camouflage and a means of obtaining the scarce resources of food and water. Taking hostage of prey also acts as a method of reproduction, for, as the host decays, the body becomes more translucent and the vulnerable to heat. Thus, pieces may split from the host to find new prey.

#### Cactus Armadillo Creature

Burrowing into the ground, this creature hides from the heat while also camouflaging itself to appear like a common cactus. Its cactus protrusions both store water and trap small delicate creatures that land on its back to feed. The cactus is laced with a poison that stuns small prey allowing the creature to feast comfortably. Note that the succulent cactus on its' back are not actually plants rather, they only resemble plants.

Each concept began with a line drawing which was photographed brought into Photoshop to be edited. In Photoshop I painted the 2D concepts as to further develop both the concept and the textural elements of the creatures and potential mood of each creature. Then I drew up a layout for the concepts. With the approved drawings for each creature it was time to begin sculpting.



(Fig 2. Original sketches that were then scanned into Photoshop.)



(Fig 2. Top left: Lizard-Owl Creature. Top right: Parasitic-Bacteria Creature. Bottom left: Cactus Armadillo Creature. Bottom right: Crab Mineral Creature.)

### The Sculpting Process

“The first step of any creature design project is to collect suitable reference material (Thacker, 2017)”, so I began with google searches for reference images related to the details that I planned on incorporating into the design. I found images of rocks, crabs, anatomy of horses, viruses,

cells. I also had a tab open to my concept art. In Zbrush I began sculpting with a sphere and pulled out the forms using the move brush while in symmetry mode (Zbrush, 2018). I append multiple subtools and ZRemesh the sphere as the form is built up until the initial forms are built. Then I divide the geometry and start sculpting the geometry continuing to divide until I can reach the level of detail I desire. To name my most used brushes: Standard, ClayBuildup, DamStandard, Flatten, Pinch, SnakeHook, TrimLasso, Mask, Transpose, and Inflat. I use Dynamesh to merge the objects so that the limbs can become seamless parts of the whole creature. Once I have the desired detail then it is time to pose and prepare for exporting. To pose, the creature is duplicated and Zremeshed creating a lower poly version. Divisions are created increasing the poly count and the high poly mesh is projected onto the lower poly mesh. Since a mesh with multiple divisions and all of the limbs combined now exists it is possible to pose the creature. On the lowest division using masks and the transpose tool, limbs and the body can be rotated until a desirable pose is achieved. Some cleaning up of the detail and shape may need to occur as a result of this style of posing since the skin is not weighted and deforms easily. For exporting the creatures, I use decimation master to keep the detail high while decreasing the poly count. Some sculpts I had reached over eight-million polys and were decimated down to five-hundred-thousand before exporting from Zbrush.

### **Sculpting the Creatures**

The first sculpt I created was the Horse being attacked by the parasite creature. For this creature I wanted the anatomy to be accurate. I wanted the silhouette to tell the creatures story and for the horse to show emotions of fear, sadness, and hopelessness. The parasite was meant to be menacing, sharp and blobby, but also represent its backstory. The silhouette of the parasite is

meant to represent its ability to take over the host of other creatures by making the silhouette look like it has the shape of a bird, depicting that prior to the horse the last host was possibly an eagle. The idea is that the body of the hosted creature starts to decay and thus the parasite has to find a new host. The difficulty in shaping the horse lay in its subtle details knowing that it has fur and representing the reference images. I also discovered through sculpting the horse that it is easiest to first sculpt the forms and details in symmetry mode and then pose the creature at the end of sculpting fixing details where needed. The first attempt at the creature I tried to first pose the horse and then sculpt it thinking it would make the pose more dynamic but it only resulted in taking more time than necessary.

The next sculpt was the Cactus-Armadillo. For this creature I wanted the resemblance of it having sand on its back along with cacti to act like a type of camouflage. I ended up choosing desert succulents as the inspiration for the cactus. I created a single leaf and duplicated it out reshaping and resizing for each leaf to keep it organic and natural in appearance. My original plan for the pose was to have it mid eruption from the ground but I realized part way through the project that I was limited in time and did not yet have the knowledge to represent sand particles. I chose to create the pose matching its perceived mood and stood it as though the creature was in mid stride walking across the desert.



(Fig 3. Progression of sculpting the Cactus-Armadillo Creature.)

The Crab mineral creature was the next sculpture to be tackled. It has harder surfaces and a blend of organic meaty flesh mixed with its crustaceous shell. The challenge for this creature ended up

being the blending of concept to sculpture since the concept was a little flatter and did not explain the placement of appendages or how they attach to the body. I tackled the hard surface problem by modeling the basic shape of the limbs in Maya and importing those limbs into Zbrush, I then used brushes like Flatten, DamStandard, and Claybuildup in order to create the resemblance of hard, smooth, but somewhat cracked and organic surfaces. The pose created for the creature was meant to be dynamic and intimidating as though it was ready for a fight or to eat.

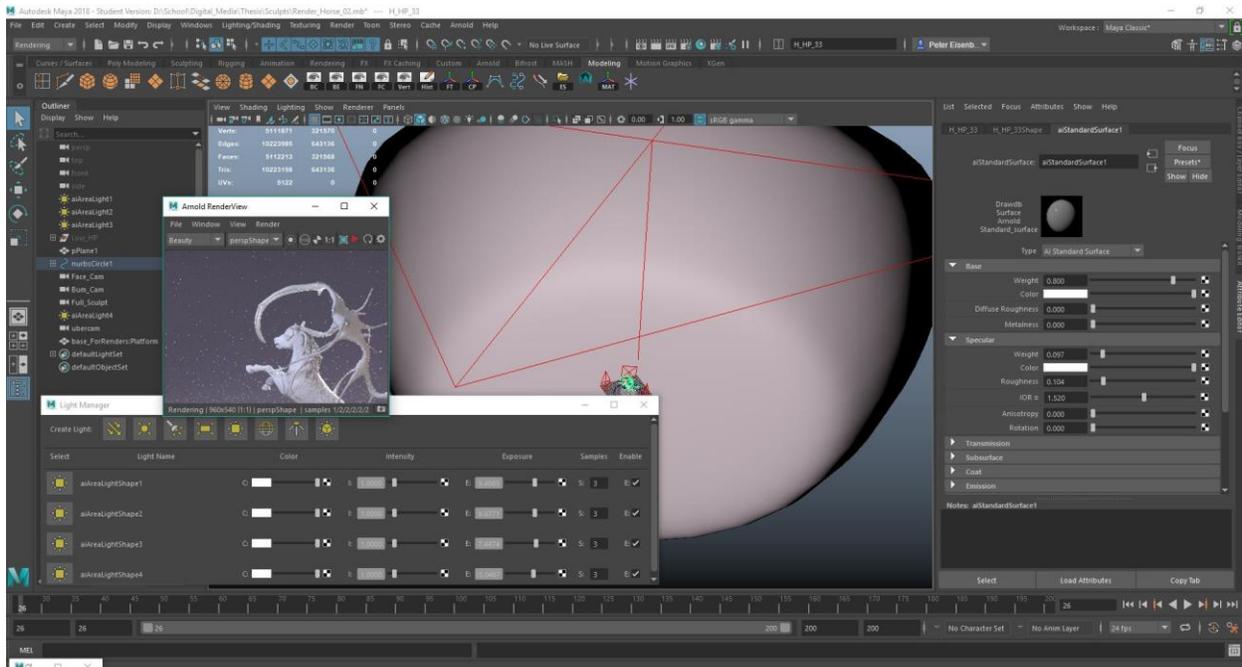
Despite getting faster and more accustomed to the process I developed for each creature, the lizard-owl creature took the longest to sculpt. I have never tackled sculpting feathers before and wasn't yet sure how I was going to represent the textural elements. After the initial form was built I tested brushes on the surface attempting to achieve a wavy dynamic and layered buildup of texture. I first attempted the clay build up brush trying to sketch out the implied flow of the feathers. I later realized that the DamStandard brush could be used to provide the edges need to represent the texture but the texture still felt flat. I realized then that like drawing, each brush stroke needed to look intentional and show the depth like that of real feathers. Like hair, I realized that feathers each have an origin at the base of the skin and using that knowledge I could poke in and pull out the forms to a more believable level of detail.



(Fig 4. Detail of feathers mid sculpt.)

## Rendering

After decimating each sculpt so that they were at a lower poly count while keeping the details, the meshes were exported and brought into Maya for rendering.



(Fig 5. A look at the Maya scene, lighting and rendering.)

The goal for rendering of each sculpt was to show as much of the detail as possible. I wanted to keep the background simple separating each piece only with the color of the background to enhance the mood. The renders were made using Arnold for Maya (Maya, 2018). The material for the background was an Arnold surface shader with specularity turned down. I only wanted spec on the sculptures to create highlights. I also wanted the material of the sculpts to look like it could be a type of plaster or clay. The lights were composed of four area lights, three of which

were focused on the sculpture while the fourth lit the scene. Some temperature was added to the lighted to keep the color dynamic.



(Fig 6. Final Renders. Top left: Cactus Armadillo Creature. Top right: Parasitic-Bacteria Creature. Bottom left: Lizard-Owl Creature. Bottom right: Crab Mineral Creature.)

## Conclusion

All four of the sculpts were completed but the time required to complete each one, and the amount of detail achieved is vastly different from one sculpture to the next. The cactus-armadillo and parasitic-bacteria creatures now look unfinished compared to the lizard-owl and the crab-mineral creatures. I noticed the crab creature appears to hold the most depth and value compared to the others. To achieve greater depth within the creatures I need to exaggerate the poses and depth of details more as well as attempt to contrast the lighting to create a greater range of values. I also noticed that anatomical landmarks and precision help silhouettes seeing as the joints on the lizard-owl creature are less defined compared to the crab-mineral creature. Because I was not as deliberate with details on the cactus-armadillo creature compared to later sculpts, its

details get lost and look flat in comparison. I still hold a knowledge gap in actual anatomy and it is visibly apparent in the creatures requiring muscle and bone definition.

If I were to continue this project I would like to go back and redefine details and poses from the sculpt. As a continuation of this project I be interested in developing the textural elements of the creatures by painting. I would also be interested in developing the creatures to make them animation ready for either film or video games. I want to study other work flows and methods to eventually master efficiency and technique. Through time I would like to become a better artist that can develop ideas from concept to the final working product.

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## **Appendix of Software**

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