6. Case Study 1: Virgil and Maurice
Our first case study focuses on a CG short with especially unique character designs and art direction. We’ll let the student director, Morgan Kelly, describe the production process of his individual cinematic vision….

**The Beginning**

As a student at the California Institute of the Arts, I studied character design, 2D and 3D character animation, story, and film theory. The curriculum stresses the fundamentals of these disciplines while simultaneously encouraging individual style and growth. The Character Animation program requires all students to complete a short animated film each year. The year-end goal at CalArts is for each student to personally develop and implement each aspect of production on the film, from story to design to animation to final editing. After two years of studying traditional animation, I began my first CG short film, *The Terrible Tragedy of Virgil and Maurice*, during the spring semester of my third year (see Figure 6.1). I then returned to it at the end of my fourth year and expanded on the story and animation to complete the four-minute short film in April of 2003.

**Story and Design**

The story for *The Terrible Tragedy of Virgil and Maurice* involves two characters who are physically conjoined but have entirely different personalities. Virgil is a dramatic, vaudevillian performer and Maurice is a vulgar, narcoleptic serpent who is in place of Virgil’s right arm (although I ultimately switched it to the left). And then there is Houdini III, a small bird beloved by Virgil who is tragically swallowed by the serpent. The entire short film was created, from early concepts and ideas to the final rendering, composting, and output, in eight months.

**VITAL STATISTICS**

- **Title:** *The Terrible Tragedy of Virgil and Maurice*
- **Director:** Morgan Kelly
- **Team Size:** One
- **Total Running Time:** 4 minutes, 4 seconds
- **Production Cycle:** About eight months, full-time
- **Date of Completion:** April 2003
- **Software:** Maya, Adobe Premiere, Adobe After Effects, Photoshop, QuickTime 5, Final Draft
- **Total Production Cost:** Two years tuition at the California Institute of the Arts, minus scholarships, plus traditional art supplies and equipment for backups
When it comes to short film production, I believe that story is the most integral, but design is definitely the most fun. I love to draw and I love to design (see Figure 6.2). I wanted to bring the texture, design, and style I could create in a 2D character environment into a 3D film. While preparing to design the short, I took into consideration the strengths and weaknesses of CG, my limitations as a beginning CG artist, and the impending April 26th film deadline. An example of my compromise with these issues began on the concept and design of the main characters. It was important to me to put all my energy into the design, modeling, and animation of only one character. With the limited time, I felt that having to model and rig two separate characters would leave me with two characters only half as good as one. So I conceptualized hybrids of two characters with two personalities. In my sketchbook I just played around with ideas of conjoined Siamese twins, conjoined twins with different features and proportions, and identical twins. Another idea was a character with interchangeable heads. The thought was that he could juggle three or four heads and randomly replace one of those with his own—each new head containing a new personality for him to react with (see Figure 6.3). But the simplest idea, design-wise, was a character with split personalities who would argue with himself. The two characters would be given opposite emotional personalities, which would hopefully set up an interesting scenario where they could argue and disagree, but be unable to distance themselves physically from each other. That situation sounded like hell to me, but would be a lot of fun to animate.

Character Design

My general working method has been to use designs to creatively explore and discover story concepts, as opposed to writing the script and then designing the characters to match the story. The initial design, which gave me the concept for the film, was sketched during a trip to Mexico. Locals would walk along the beach selling fish. I made a sketch of a character with lots of beaded garb and a fish for a hand (see Figure 6.4). I liked the idea of the guy talking to a creature that replaces his hand. But would the man control
his arm or would the creature have control over it? There was definitely more entertainment value in putting the creature in control of the limb. Then I did some sketches where the creature occupied the entire limb but still retained the joints and manipulation of a human arm. The problem was that the creature looked like a puppet and not a separate character. This illustrates how the initial designs and asking these questions contributed to forming the story.

After a few drawings, the fish became a snake. I also decided to use the anatomical movement of the snake instead of the human arm. Some of the initial designs had Maurice the size of an average snake, but I enjoy more asymmetry in design. I made Maurice larger so he would offset the balance of Virgil and become more of an obvious burden to him (see Figure 6.5). Since Virgil’s persona was the polar opposite of Maurice’s, his design had to also reflect that. I made Virgil’s face soft and appealing, with large eyes and a fragile physique. Since he only had one normal hand, I made it larger than usual for more communicative gesturing.

**Inspiration**

To keep motivated and inspired while moving around, I had a small, plastic-sleeved folder full of paintings, drawings, and illustrations of different artists and some of my film’s characters and storyboards. I’d fill it with art that had mood and great color. The folder contained illustrations by such artists as Joe Sorren, Enki Bilal, Eric Pignors, Shaun Tan, Mark Ryden, Laurel Huggins, and Mike Mignola and doodles by Jeremy Bernstein. My most obvious design influence is Tim Burton’s *The Nightmare Before Christmas*. I referenced that film to see how the stop-motion modelers sculpted their shapes from 2D designs. I also enjoyed the subtle imperfections and textures in the topology of their characters. And after a tour of the *Oddworld Inhabitants* game studio, I was hooked on their character designs as well, including their application of illustrative textures on non-photo–real character models.

**Pre-Production**

My production pipeline was very rough and incongruous. It began simply with sketches and notes. I had a sketchbook with me everywhere I went to keep all my ideas intact. Any time an idea popped up that might work for the short, I’d sketch or write it down—for instance, pieces of conversation I’d hear in public. I liked that those would come from random sources, which were honest and genuine. I would often make small vignettes with the characters to figure out who they were and write down lines of dialogue to discover how they’d act toward each other. I felt that before I could begin, the two characters had to seem real to me. Then I could drop them into any situation and let the story naturally evolve from how they would react to a problem. Figure 6.6 is an example from my sketchbook showing Virgil, depressed, sitting outside of the vaudevillian theater and talking to a small bird perched on his fingertip. Meanwhile, Maurice is slithering...
below, eyeing the bird hungrily. This concept was another jumping off point for me—a boy with a snake for an arm. The boy loves his pet bird; the snake wants to eat the bird. That twisted situation still makes me laugh.

To help me solidify the characters’ personalities, I wrote character descriptions and back stories for them. Here’s a piece that I wrote for the character development of Virgil and Maurice:

Virgil Pettycoat is a 23-year-old, pale, thin, lanky, blue-eyed, male human with a unique condition. He’s often quiet, which at times leads others to believe he is dimwitted. But he is of average intelligence, perceptive, and sensitive to the situations of others. When he does speak, his voice ranges from dramatic to melancholy. Our timid Virgil also has a dark side to his person. It is literally attached to him; Maurice—a large, vulgar, antithetical snake—is in place of Virgil’s right arm (see Figure 6.7). Maurice loves a stiff Sapphire and tonic, small rodents, back massages, and oil rubdowns. He hates when people joke about him being Virgil’s right-hand man and when he is pet against the grain of his scales. Their symbiotic relationship is not without friction. Maurice feels limited by his physical connection to Virgil, and therefore despises him for it. As a result, he constantly criticizes Virgil, curses at him, and belittles him in front of others. Virgil feels constantly on his toes around Maurice. The only time he can be alone is when Maurice passes out. Because Maurice the snake is a narcoleptic, he will suddenly drop limp along Virgil’s side in a deep sleep, accompanied by a horrendous snore. It’s during these times that Virgil feels the most like himself. He is at ease and enjoys the silence mostly. Virgil is a dreamer while Maurice is a pessimistic realist. Maurice sees Virgil’s dreams as naïve, simple, and worthless.

**Story Reel**

I was concurrently creating storyboards from the vignettes and writing the script in Final Draft based on notes I had in my sketchbook (see Figure 6.8). The two simultaneously evolved, helping me to solidify my storyline and keep all the content organized. When I had a sequence of storyboards together, I’d scan them into Premiere for the story reel. As the story reel grew, I’d add some necessary sound effects and music for the mood. The character thumbnail
drawings from my sketchbook grew into detailed illustrations. From those I made a schematic front and profile drawing of Virgil and Maurice to be scanned into Maya for the basis of the modeling. As I was modeling/rigging the characters, I was also finishing up the rough story reel. I recorded scratch dialogue of myself and a friend from the script. This was added to the story reel as I further edited the timing. For the final voice actors, I used two talented, artistic, and comedic friends of mine, Eric Malamud and Ron Yavnieli. We did some test readings of the script to get the characters’ voices worked out. The recording was done digitally in a sound studio at CalArts, then burned to a CD. I edited the new audio and added it to the story reel, replacing the scratch dialogue. Around this time I had also finished up my rough modeling/rigging. Now I could finally animate!

Modeling

The most daunting obstacle I feared was overcoming the technical aspects involved in creating a short film with computer graphics. I don’t consider myself a “technical Mafioso.” I can’t absorb a program easily by just taking a class and watching demonstrations. I have to jump into it with a problem that needs to be solved and mill around to become familiar with the program. Classes were integral for me when I’d hit a wall and then need direction with a specific problem.

Modeling, rigging, texturing, and lighting can be quite complex. But the cliché about “a complicated use of the basics” was the foundation for my CG experience. I didn’t feel that I had to have an expert’s touch in digital modeling, so when I modeled the character, I used whatever means were necessary to stay true to what made the traditional design appealing to me.

After the schematic drawing was imported to Maya as an image plane, polygons were used to model the head and limbs of Virgil. It’s an intuitive method because of the close comparison to clay modeling. I felt comfortable that I could push and pull the CVs around to find nice shapes for the character. Then I sculpted the upper body from a NURBS sphere because it gave a smoother curve when it was deforming. It looked better when I’d bend Virgil’s spine and then straighten him out quickly to reverse the curves during animation. Lastly, subdivision surfacing seemed best for Maurice’s texture and extreme manipulation for posing. I worked very hard at the shapes and silhouettes of each body part individually, and how they came to form the body shape as a whole. It was important to have smooth lines and arcs to streamline the body of the snake, and to contrast it with some harder edges on Virgil. Even on Virgil, I wanted each body part to cascade nicely into the next limb. At this point I had the rough model made up of the head, torso/neck, arm, hand, pelvis, two legs, and a cylinder for Maurice. The model was made with the arm and snake stretched outward, but the body, head, and legs were laid out in a natural standing pose for Virgil.
Setup

It’s easy to get stuck noodling your character models and textures while procrastinating and postponing animation. But storytelling is projected through animation. The last thing I wanted to have was a demo reel with just a fancy character model rotating in space. It felt to me that every day that passed was a day of animation lost! I knew that I was going to use Jeremy Cantor’s SimpleGuy skeleton to speed up the rigging process (see Figure 6.9). I re-proportioned it to the scale of Virgil and began to apply the rough pieces of the model to the skeleton. After many tests using an IK chain and clusters for Maurice, I parented him to the skeleton body. Now the animation could be blocked out even though the model had not been completely refined. I began the animation knowing that as long as the model had the correct proportions and size, I could tweak and texture it later, as well as waiting to add details such as the eyes and facial controls. I believe that it made the entire experience much more enjoyable. If I was frustrated with the animation I could parlay my efforts toward refining the face or add some more textures.

Both Virgil and Maurice had very simple facial controls. I didn’t bother with any blend shapes. Virgil was set up with eyes, eyelids, eyebrows, and a jaw to get his expressions. Maurice had just lids and a large jaw. He initially had pupils like Virgil, but I ended up liking how he looked with all-black eyes. That also sped up the animation process since I didn’t have to make his eyes focus on anything. However, there is one shot where Maurice rises up to strike at a small blue bird. I wanted him to seem much more menacing for that moment, so I positioned the camera to look up at him—made the gray clouds point in toward him, curved him upward, and changed his eyes to be yellow with red irises (see Figure 6.10). That inconsistency on the eyes didn’t bother me because of the more intense effect it had on the shot. The eyebrows on Virgil were free-floating objects parented to his head, with clusters to shape his expression. For their mouths, I ran three joints down their jaws from the head bone. All the lip synchs were done by rotating the joints to roughly get the phonetic shapes. The multiple joints in the jaws also allowed for overlap in the animation. This facial setup satisfied me, especially considering the fact that Kermit the Frog could act out a gamut of emotions with no facial movement except for a hinged jaw!

Texturing

All of the character textures were rendered traditionally. I sketched them out, then rendered them with AD markers or Trias for the base, ink for detail, then opaque soft oil pastels and a white paint pen on top for highlight. This way the backgrounds (also traditionally rendered) and the characters would have a consistent quality (see Figure 6.11).
Animation, Rendering, and Editing

The finished rig and model were pretty light and had fast playback. It helped that my scene environments were very light also. But to minimize some frustrating animation drag, I did create a lower-poly model, which I parented to the skeleton for the animation. I’d just hide the low-poly, and then make the high-poly visible for the render. I began to animate the bodies of the characters according to the story reel and dialogue. As a scene was completed, I’d create a quick test render of it and then replace the scene in the story reel with it. I also began to render out some test shots with textures and lighting.

The lighting was entirely global illumination with white lights, then colored spotlights for light sources for the shadows (see Figure 6.12).

Whenever a shot had everything roughly together, I’d render it out for After Effects. Shots were rendered separately in layers of foreground planes, characters, ground plane, props, and background planes. The sky was always added in After Effects. Not many students at CalArts were making CG films, so at night I usually had access to all 14 computers for rendering and working. All of the computers in the CalArts Maya lab were networked together, where each student had been given 8 gigabytes for their work. As my rendered scenes and movies began to grow, I had to request more space for my film. I eventually had 30 gigs of hard-drive space. As the deadline neared, I used multiple computers so I would not have any downtime while waiting for renders. As my Maya-rendered frames would finish (generally rendered from six to eight computers), I’d make uncompressed movies of them in QuickTime. When those were done, I’d import them into my After Effects computer into their appropriate layers. When all the layers were in place, I’d make an uncompressed QuickTime of the compiled layers, which would be dropped into the Premiere story reel on a separate computer. The story reel would be constantly updated with the new renders to view the overall film’s progress. If there were no renders finished from Maya, QuickTime, After Effects, or Premiere, I would work more on the animation computer. After the body animation was done for the entire piece, I finished the facial setup and did that animation. This really snapped up the overall emotion of the animation since the previous work was relying on just the body. The story reel became the final film after constantly being.
updated with newer work. I was continually showing the evolving story reel to friends and professors to get feedback on the clarity of the story and the pacing of the overall film.

**End Result**

Partially based on my short film’s presence in my demo reel, the summer after graduation I landed a job at Electronic Arts-Maxis as a Maya character animator on *The Sims 2*. Then, in the fall, I started working as an assistant character animator at DreamWorks Feature Animation on *Shrek 2*. I’m currently trying to sneak my way into a visual development position.

**Conclusion**

I recently attended a panel discussion at the Animation Union in Burbank, California. The evening’s topic was about the current overall transition in the animation industry from 2D to 3D. Many of the speakers were involved in a small debate over the pros and cons of creating a short film, and how it related to advancing an artist’s skill and aiding their demo reel. A student’s 3D animation demo reel was shown to the audience as a successful example of someone recently hired at a feature animation studio. The reel had about five animation sequences, each with a different character. It showed a range of acting and style and portrayed by example that it’s not necessary to have an entire short film on your reel to get work. Some argued that when you create a short film, there will inherently be shots that are weaker than others. Some felt that it was better to put your efforts into a couple of scenes to have greater quality. I think if you’re in a rush to get work at a studio, then perhaps this route is true. But making a short film is an invaluable microcosm of experience that forces you to become involved in many aspects of filmmaking. At CalArts, many students will begin their demo tapes with a “best of” reel, featuring the strongest shots from their films mixed in with different animation assignments. This shows off their strengths and is followed by their short films in their entirety, displaying their pacing, story, mood, and rhythm on a shot-to-shot basis. Making *The Terrible Tragedy of Virgil and Maurice* broadened my filmmaking perspective and opened up avenues by being showcased in festivals, which pushed it out to a larger audience than the recruiters who merely fast-forward through demo reels. With all that I learned while making this CG short film, I can’t wait to begin my next one!

_*The Terrible Tragedy of Virgil and Maurice*_ is included in the short film collection on the DVD that came with this book.