Methodology Paper
Writing And Research
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December 15, 2010

Prototype 2

Building the Prototype

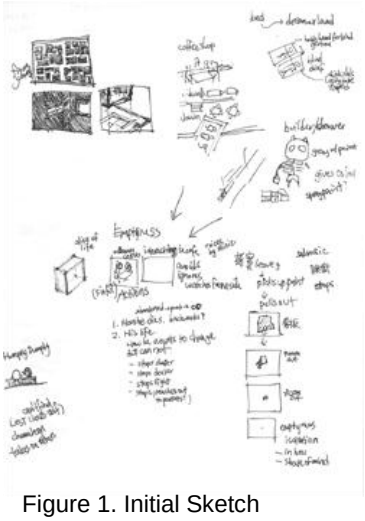

Figure 1. Initial Sketch

Figure 2. Storyboards

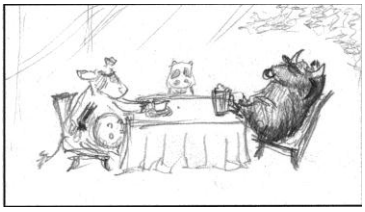

Figure 3. Single Frame

Each stage and test of the prototyping process covers different degrees of focus if not all, either on concept, look and feel, audience experience, or production.

With a revision in mind from the last prototype, I started out by doodling on my notebook some of the ideas that could carry across. Random ideas were jotted down and roughly sketched out in support of ideas that popped into my mind. Since I am more of a visual person, in my working process, I tend to use drawings and figures rather than scripting by text to describe a sequence of events. Though I am not as talented an artist as I wished to be, drawing helps me convey ideas to others much easier than words. Occasionally these sketches are picked up for future projects when I go back to it; others are just for my entertainment. Shown in Figure 1., is a rough sketch that included the birth of this prototype's concept and a couple of random ideas, including a dream I had that morning. With a main idea, I write and draw different scenarios that could evolve or further push the thought.

After coming up with an overall scheme of how the story will play out, I would draw storyboards (pencil on paper) to lay out the story. Although storyboards are but a playback of my imagination recorded on paper, it helps me have a better understanding of the overall story and certain details. Most cases it tells me whether or not the idea would stand on its own and whether or not it needs more thought; sometimes some ideas are only "cool" when imagined. Storyboards also help me greatly in communicating ideas with other people. Figure 2. shows the first storyboard for this prototype, some details are missing and the ending was cut short because I ran out of frames.

These boards were presented for comments, opinions, and feedback. Some addressed the overall concept, some had trouble understanding the ending. Taking suggestions into consideration, the boards were then scanned digitally to be processed for a first cut of an animatic. After adjusting the boards' levels and curves in Photoshop, each frame was cropped out, saved into a single image (Figure 3.), and then imported into Flash. Timing is adjusted to the frames. For the audio, I wanted a sad clip of music. After

random searching on the internet I chose "Moonlight Sonata" by Beethoven. The sound did not work as planned in Flash; it was hard to figure out the ins and outs of sound playback starting in a middle of a audio clip. Therefore, I exported the timed video and switched to After Effects instead. While After Effects is also not a sound program, the audio system is slightly better and it has qualities similar to Flash that would make the process quicker. However, pacing out the timing in Flash is more effortless and efficient. Overall, I liked how the animatic played out even though 97% of my audience didn't understand my story or goal, half of which showed disapproval of the sound selection. I wouldn't say I am too concerned or affected by the feedback, but I do believe some changes could be made. I then drew a couple more storyboards for the edit repeating the same process and comprised the new frames (Figure 4.) into the previous composition. To me, the new boards shifted the story drastically towards a direction I was not aiming for, but I finished the cut nonetheless. I feel it alters the reasoning behind the actions, which is where I plan to edit next.

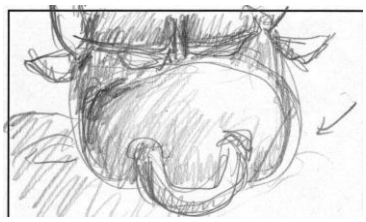

Figure 4. New Frame

Processing concurrently with the story are sketch test style frames for the look and feel and character model and rigging. For the look and feel, I wanted three different styles in the scene: the calf is one style, the set is a style the calf built, and the parents are the calf's imagination. In my first test for the set and parents, I used acrylic for the background and colored pencil for the parents. To create a childish effect I painted with my left hand but it still looked too refined. Each were painted on a different piece of paper and then scanned and layered. The parents were sketched out with colored pencil, the cow is much harder to draw than the bull. She always looks like a pig on the first attempt. (Figure 5.) In Figure 6. is a test style in showing all the pieces layered in a scene. I am not satisfied with the skill level I have with the medium. Though a little bit disappointing, I have to admit it just doesn't look good.

Figure 5. Pig-looking Cow

Figure 6. Style Frame 1

The modeling process took much more time than needed because of my obsessiveness over detail. Having extensive professional work experience exposure with 3D models probably drilled the high standards into my mind. I would say generally it is good practice, but time is often wasted on perfecting things that might not be so important for the greater scheme of the project. In some cases, there are glitches that you can get away with, especially if it's a personal project and nobody else would see the backend. For example, having triangles rather than evenly spaced quads on the model, or having poorly laid out UV's. Generally, unless they occur in a really obvious spot: turn, fold, or close-up shot, normally nobody will know. However, having that in mind (if you can't see it, don't bother) as I

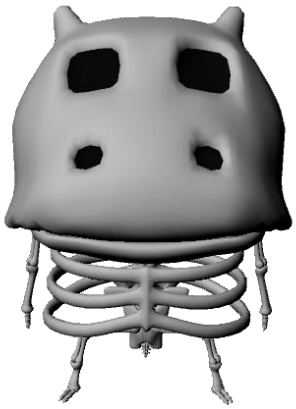

Figure 7. 3D Calf

was building the model, memories of my 12 hour modeling days flashed before me and I was reminded how much it irritates me having these flaws. As a semi-skilled apprentice in modeling and texturing, I will have none of that, therefore, I probably spent 20 hours more than I actually needed. The model (Figure 7.) is UV'ed out and rigged, all done in Maya. With the help of Jason Wolley's CG Character 2 class, I created my first full rig of a bipedal character. Here are some of things I learned along the way excluding the obvious "save, name smart, and backup files."

- Face Z.

- Apparently there is a good reason to set characters to A and T poses.

- Don’t set (model) the arms or legs to angles that are not on the same plane in any view, one may be fine. It will take twice the work to adjust. Not only would you have to arrange the rotation axises of the joints, you will go insane when you have to pick a direction to follow for FK or IK.

Troubleshooting: the arms are easier to fix.

Problem – the IK arm shifts position (Figure 8.) after the pole vector constraint is added.

Fix – before adding the pole vector constraint to the controller, do an aim constraint. The joint would then follow the angle of the elbow and work correctly.
As for the legs, lesson learned: DO NOT set them bent, facing outwards, and not on the same plane as the hips.

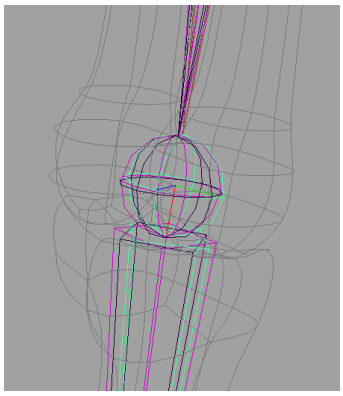

Figure 8. Elbow geo (gray) with the three joint chains - IK (green), FK (navy), bind (purple). They should all overlap on the same spot.

FK would probably work fine if the joint’s rotation axises are set up to swing in world space. But then IK would be totally out of sync because the rotation is not following the joints, therefore causing trouble while setting up rolling and twisting; they will affect all three rotations rather than only RotateY or RotateZ.

Fix - Much easier to tweak the model and rig it properly. If it does work along the joints, there would be a lot of counter-animating to be done.

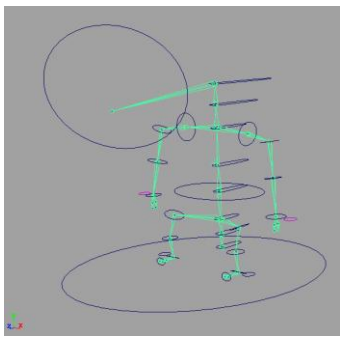

Figure 9. Skeleton

Having redone the process countless number of times throughout the semester, I could probably finish the same rig (Figure 9.) from scratch in two days now, compared to a month when I just started learning.

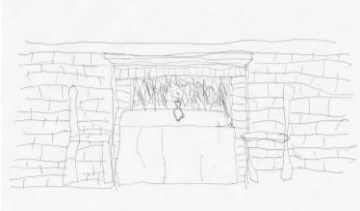

Figure 10. Pen Test 1

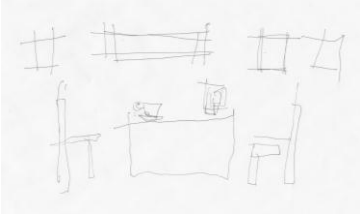

Figure 11. Pen Test 2

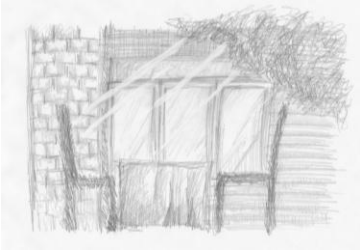

Figure 12. Pencil Test

Since I didn't like my first attempt of style, I worked with pen and pencil. Figure 10. is a pen test drawn with my left hand upside down; drawing in reverse is actually a technique Don Hertzfeldt uses in creating childish drawings. I don't think it works too well for me in this case. Figure 11. is drawn with my eyes closed, much more success in making a childish touch. Figure 12. is an attempt with pencil to create a sketchy scribble messy feel, I got a little carried away and made it look a little bit more "prettier" than I intended. I also drew the cow and bull with pen shown below in Figure 13.. Again, the cow looks like a sow. The bull proportion is off in the first sketch, the second looks a lot better, look at the muscles!

Figure 13. Character Test 2

With a random experiment, Figure 14., I layered all the tests together, it has an interesting touch to it.

Figure 14. Style Test 2

Due to my incompetence in working in color, black and white would also created a sad, dark, ambient atmosphere which adds onto the general tone set for the story.

Prototype 3

As I mentioned above, the new edit altered the intention and reasoning I was aiming for. Several aspects and qualities did not make sense anymore with the initial explanation; for example: the cause of the isolation, the cause of the fight, how the parents exits, and why the set is being built. After some rewriting and conversations, I thought it might make more sense if the story was based on bullying and making the bull character the actual bully. The overall style and idea would stay similar to the previous story. The 3D calf is drawing in the scene (which is revealed to be a 3D room at the end), his scribbles (pencil drawings) makes out a rough outline of a playground. As he is playing in the playground, he is beaten up by a (pen-drawn) bully which is actually his imagination.

Building the Prototype

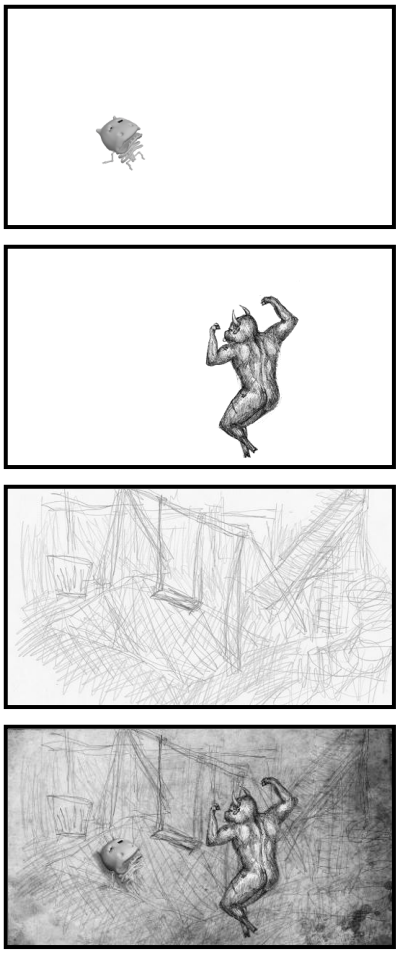

Figure 15. Style Frame Breakdown

The beginning stages were similar as before, starting with a sketch, moving to storyboards, and then an animatic. However the animatic is a little bit different than the previous iteration. To insert the 3D character into the scenes, each key pose had to be blocked out in Maya. There were some minor flaws with the rig at the time, so the joints were temporarily parented to the geometry rather than being bind to the skin. For key poses, it worked fine. Ambient light was added to the scene and then each frame was rendered to a png file with alpha. This process took quite a bit of trial and error to get the right render setting, position, size, format, alpha, and look. It was probably a good thing time-wise that there were only fifty frames and the scene was wasn't too heavy. The frames were then overlaid on top of the storyboards in After Effects covering up the drawn calf character in the boards. Some masking was applied in order to allow the 3D seem to be covered up by the 2D. Style frames were composed (Figure 15.) in a similar fashion; every shot has four basic layers: calf, bull, background, and an adjustment layer. An overlay texture was applied to the background and drop shadows with blurring edges were added to the characters to make them look more belonging within the shot. The overall grunge added to the dark, gloomy look.

For the spinning room effect, the idea is to reveal to the audience that the 2D does not "exist" in the calf's world, it is all his imagination. Taking reference from several street artists like Kurt Wenner, the idea of viewing the painting from a certain angle creates a 3D depth effect, while straying from that angle the artwork would look distorted

Figure 16. Kurt Wenner

and skewed. (Figure 16.) To achieve this illusion, there is a command in Cinema 4D that can project an image (2D) in Photoshop onto a 3D model; the 3D model then takes on the image as its texture accordingly to the angle and face that was exposed to the projection. It is an extremely helpful tool in creating seamless textures. However, it has been a while since I last used this tool and it took me a couple hours with reboots to make it work. Ironically enough, the second time around it still took me the same amount of time even though it was just a simple "ctrl+c and ctrl+v" command, for some reason it did not work. Eventually it caved in but I still have not figured out how it works and how it does not work, so I might have to plan a couple hours the third time around.

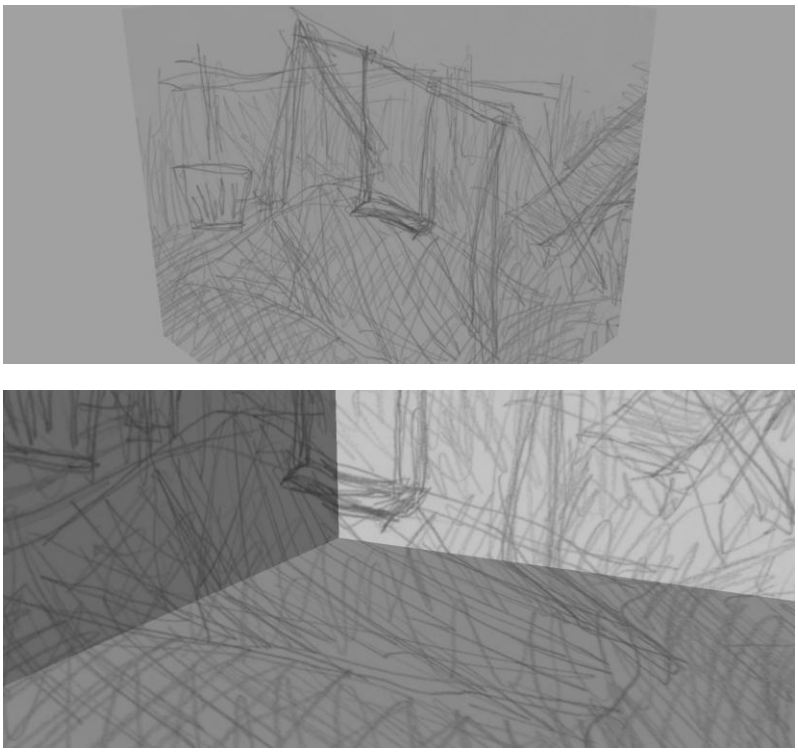

Figure 17. Room spin test