ABSTRACT

Win or Lose, Pixar’s first original venture into episodic long-form storytelling, features a variety of stylized looks and visual effects as diverse as its cast and set of perspectives. To face these challenges, the effects team was formed from a group of multidisciplinary artists from typically separate groups across the studio. We worked under a philosophical mindset focused on collaboration across departments, lightweight and nimble experimentation, and an eye for global impact over polished detail. Each episode provided its own unique set of challenges and opportunities to exercise these philosophies, as well as successes and failures. We discuss examples from our production that highlight the process of creating these stylized effects.

KEYWORDS

stylized effects, episodic storytelling, collaboration

1 THE CHALLENGES OF EPISODIC STORYTELLING

The production Win or Lose brought new opportunities for storytelling as well as its own unique challenges and constraints. More had to be done with less - overall runtime was nearly triple that of a feature film while the crew was a fraction the typical size. Additionally, Win or Lose features perspective-based storytelling - each episode is told from the perspective of a different character, meaning that stylized effects were unique per episode and new techniques had to be developed for each. With Pixar’s pipeline and workflows engineered to best suit building a jumbo jet, the effects artists had to learn to work more nimbly and collaboratively in order to patch together a stunt plane.

2 COLLABORATION AND INSPIRATION

With a team size that stayed in the single digits, the artists could not afford to specialize in specific roles and came from a variety of teams across the studio - cloth and hair simulation, crowds, sets, and effects - to form a single ‘shots’ team. This single team was responsible for the work of what would typically be several departments on a film. The blurry roles and varied skill sets of the team provided a greater flexibility to meet the dynamic demands of production as they changed per episode in production. These challenges gave new opportunities for individual experimentation as well as cross-training and learning new disciplines over the course of the show. Fostered by close communication and collaboration between teams, creativity thrived under a spirit of camaraderie.

From the onset, the art team designed the world of Win or Lose with both the goals of storytelling and the feasibility of production in mind, leading to a grammar of simpler and rounder shapes that still incorporated unique stylization. This language facilitated specific choices to streamline production - clothing was primarily rigged instead physically simulated. Hair was rendered as subdivision surfaces with fuzz added for detail rather than millions of curves. Hair was also rigged in most cases, although rigid body simulation was used in the case of ponytails.

Dust puffs, a known element that would occur throughout the series, were first designed and animated in 2D, then translated and modeled in 3D to form a library of effects that could be frequently reused. They were used either in the original stepped frames or interpolated for more dynamic moments and placed either manually or through ground-contact simulation.
Hand drawn 2D effects were also incorporated more directly by taking image sequences from 2D animation software like TVPaint or drawovers in our 3D animation software Presto, and importing them into Houdini. These images were traced into flat polygons which were scattered with points and then extruded into rounded, cartoony shapes. This 3D geometry could then be shaded and placed into the scene for integration lighting and compositing.

In one episode, softball pitches came with over-the-top trails, impact effects, and a giant roar (Figure 1), inspired by scribbly teenage drawings. The director provided detailed art as a starting point. We used Houdini to generate simple geometric shapes and textured scribble lines on varying frame rates and rendered all elements with RenderMan for Houdini (RfH). In comp we used several effects to blur, glow, color-shift, and add grain. The focus on heavy comp processing instead of complex effects helped us match the stylized art more quickly.

In another episode, a blob-like character’s animation was augmented with simulated drips flowing across its body. This was accomplished with a versatile effects rig that merged the character meshes with the results of a particle simulation, smoothing them into a single continuous surface.

Technical development happened across departments as well - with a highly technical art director, some looks were prototyped in Houdini and Unity before being developed further by the shots team. The social media followers were one example (Figure 2) - initial concepts described them as a mass of small hearts that coalesced into a cloud shape. A shared normal shading treatment was first prototyped in Unity to blend the hearts, but proved to be difficult to replicate in the global illumination rendering and required additional changes to the shader. The cardboard cutout characters were another example of early prototyping by an art director, which were then built out fully to connect to our 2D pipelines and with added details like glitter and sparkles.

3 ITERATION AND EXPERIMENTATION
In order to stay nimble with the various challenges of each episode, a wide variety of techniques were used to prioritize iteration speed and simplicity over complexity and robustness. On feature films at Pixar, elements are typically rendered in the same lighting environment as much as possible in order to facilitate stereoscopic rendering as well as a more consistent and ‘physically correct’ rendering process for all departments. Without the stereoscopic requirement or dependence on other elements, we were able to render directly using RenderMan for Houdini (RfH) for quick iteration on an assortment of effects elements, particularly stylized ones like party house rave lights, anime-inspired impacts, or other flat-shaded effects that were enhanced in comp.

These lightweight working styles also carried over to effects like tears and drool, where simple interpolation between sculpted shapes provided the most immediate way to hit specific stylization notes.

With a focus on lightweight iteration, the shots department also had the opportunity to experiment with look development on early ideas, even as story concepts were still in flux. In particular, Kai’s perspective began with early ideas of a puzzle-like representation of her struggle, but evolved to a more emotional metaphor of scratches and sinking. By iterating quickly and early, these initial ideas remained inexpensive to attempt.

Some key effects did require a more complex setup, while still remaining more constrained than is typical on our feature films. The dome effect in the last episode (Figure 3) used over-multiplied motion blur on particles to render the ethereal structure while still retaining its structural elements. Fracturing of this structure was accomplished using a mix of procedural and hand placed lines in order to best hit directorial notes.

Creating the effects of Win or Lose was the result of the efforts of a wide range of artists committed to the principles of collaboration with a mindset focused on the show as a whole rather than individual effects. By departing from some of the more defined procedures of our feature films, we were able to create a flexible and adept team to meet the challenges of a new form of storytelling for Pixar.