Oh My Disney Princesses | Computer Graphics World

Karen Moltenbrey

In Ralph Breaks the Internet , Ralph and Vanellope decide to make a viral video to pay for an eBay bid gone awry. And the subject of this video? The Disney princesses in the Oh My Disney realm of the Internet.

The sequence uses a tongue-in-cheek approach, lovingly poking light fun at Disney and its beloved princesses. Vanellope finds the princesses in a castle room, coming face to face with the likes of Cinderella, Ariel, Belle, Jasmine, Rapunzel, Moana, Snow White, Aurora, and more – 14 officially coronated Disney Animation princesses in all; 15 if you count the unofficial Princess Vanellope von Schweetz. Merida is also included among the official royalty, even though she is from "the other studio" – a fact that is addressed during amusing banter in the film.

When Vanellope first meets the princesses, they want to know what kind of princess she is – Was she kindnapped? Poisoned? Enslaved?

The idea for the scene was made on the fly during production and presented at a story meeting, not knowing how it would be received. But, Disney and the directors loved it and were very supportive of it. "Putting Vanellope in a room with all of the Disney Princesses was funny from the get-go, considering her unapologetic personality and laidback outlook," says director Phil Johnston.

"There's so much legacy, and these characters are so beloved," says Kira Lehtomaki, head of animation.

The first order of business was to research the characters. "We have a unique situation here, where we have a direct line to the original filmmakers in so many cases, like Berny Mattinson, who's in our story department and who worked on *Sleeping Beauty*," says Ami Thompson, art director – characters. "We have the directors of *Pocahontas* and so many others. We could ask, 'What would she do? How would she move?' And we have access to the voice actresses, too."

They also accessed the Disney Animation Research Library, which houses all the original drawings from those 2D animated films, to study how expressions were drawn and the style of the characters' movements.

The biggest challenge was converting the characters from their original 2D form (some older, some more modern) to CGI. "There were all kinds of challenges that we never really thought of before. You just accepted it because you're looking at the drawings. But now, you had to make it work in the real world," says Lehtomaki. "They were no longer lines on a piece of paper, it is now a sculpture, a 3D sculpture in the computer."

The textures of their original outfits as well as new, contemporary clothing also had to be made in CG. Thompson was tasked with redressing the classic cast. "I still can't believe that I got to design casual clothing for the Disney Princesses," she says. "We wanted to incorporate modern style that reflects their individual stories – Cinderalla's T-shirt has a pumpkin carriage with 'G2G' for 'got to go.' Snow White's jeans have an apple print. Merida's tank top has a bear on it and reads 'Mum.' Everything is edgy, surprising – we designed band-style shirts, flannels, and chopper-style tees."

Even the more recent 3D characters like Moana needed re-stylized to fit into the *Ralph Breaks the Internet* visual universe while retaining their highly recognizable aesthetic; the same holds true for the Lucasfilm and Marvel characters from other parts of the Oh My Disney environment. "When you line up these characters next to each other, they don't fit in the same world. Some are more cartoony, some are more realistic. And their eye sizes can be drastically different," says Lehtomaki. "Even though there was unification, they had to be authentic to who they are as characters, and they had to be recognizable as those characters. They're still the characters we all grew to love over the years."

Hair often became challenging as well – how would they make Ariel's hair, which was always voluminous and flowing underwater in *The Little Mermaid*, but here she would be sitting in a waterless room? Meanwhile, Aurora's (Sleeping Beauty's) hair is very stylized, with art-deco curls and cinnamon bun-like bangs that worked perfectly on paper but not so when computer-generated. "The artists [back then] were making choices based off of what angle they were drawing the characters from, so while they could move lines in a drawing to accommodate that, in CG, we actually have real strands of hair growing from their head, so the hairdo has to make sense but also maintain the integrity of [Marc Davis, Aurora's original supervising animator]."

To overcome these issues, the animators and simulation team worked together to figure out how to move each strand of hair to achieve a particular curl. "It's literally handcrafted on every frame to make sure it all works," says Lehtomaki.

On an animated feature, the animation team spends preproduction building the main

character of the movie, such as Pocahontas or Rapunzel from *Tangled*. On this film, all these princesses had to be rebuilt only this time within the *Ralph* style, a process that required modelers, riggers, the hair simulation team, texturers, and lighters all working together with animation in what was informally dubbed the Princess Palooza Lab. The process was collaborative and iterative, not linear – and not just for the hair, but for the movement as well. "This is a team sport. We couldn't do it without each other," Lehtomaki says.

Mark Henn, a legendary Disney animator who originally supervised five of the princesses, advised the current staff. Also, the original voice actresses for all these characters (except one) returned to not only voice their particular princess in *Ralph*, but to discuss the characters with the CG animators, providing unique insight as these women also had been live-action reference models for the particular princess.

While each princess character presented her own unique challenges, Lehtomaki was more familiar with Ariel, whom she animated for *Ralph*. "It was so intimidating to try to evoke the wonderful animation Mark and Glen [Keane] had done almost 30 years ago now, and bring it into the 3D world," she says. "Mark sat with me, and he was with us along this journey. He did some hand-drawn animation and would do draw-overs on my scenes, little tweaks to help make Ariel feel like Ariel. It was a wonderful learning experience for me. Very surreal."

Nevertheless, it was quite nerve-wracking, she says, as these animators were people who had shaped her childhood, "and the idea that I get to add my creative touch to this legendary character, with these legendary artists, was kind of a mind-blowing moment for me," Lehtomaki says. Moreover, she has always been a big fan of Ariel. "When that movie first came out, I was in first grade and probably sang 'Part of Your World' every day for years. Ariel was a collector, and I am a collector. She was like my kindred spirit," she explains.

In the *Ralph 2* sequence, the princesses are in the same room, in the same shot – 15 A-type characters. They were not background or secondary characters. And each's performance had to be specific to that character in terms of substance and movement. They each have very distinct personalities and strengths, and posture. The animation rigs were pretty standard for the characters, but they contained a myriad of controls to hit all the right poses. In addition, facial expressions were often key. When Ariel smiles in CGI, it has to look like it did in the drawings from the 1989 feature.

The sequence was indeed a surprise for audiences. But, there are surprises within this surprise.

"There are little homages to really iconic scenes from the original films that are peppered throughout the background in the sequences, so even if a princess is not the center of focus in a scene, there's still intricate character movement happening in the background," says Lehtomaki. "They all had to be doing something very specific to who their character is, which was really fun to do, because there's all these little Easter eggs. I think the fans of these princesses and of the original movies will delight in watching the sequence."

Is this very unusual Disney sequence iconic enough to go viral? We'll have to wait and see.

(For an extensive story on the CG techniques used to create Ralph Breaks the Internet, see the Q4 issue of CGW *.)*