

The Making of DreamWorks' Monsters vs. Aliens

A Master Class by Dave Burgess, Head of Character Development

When it comes to animation, the devil is in the details. Which turns out to be exactly what makes Dave Burgess tick. The Head of Character Animation for DreamWorks' *Monsters vs. Aliens* gave a master class at the Cinekid Festival 2009 in which he described the development of the main characters in terms of 'swinging around jaws' and 'twisting eye sockets up and down'. It sounds extreme, but these are subtle adjustments: most viewers don't even notice them. But, "man, it pays off".

"Gorgeous", David Burgess can't help saying again and again after showing the audience clips of the characters of *Monsters vs. Aliens*. With a team of around 40 people he worked on them for 2.5 years. Burgess has worked in the animation business for 25 years, starting out as a freelancer, and after the first 10 he was ready for his first feature, which supposed to be *Beauty and the Beast* (1991). But Disney decided to put the project on hold, so it became *The Rescuers Down Under* (1990). Later on, when he talked about stuff only "geeks like him" notice, he revealed being the one who put the skulls in the pupils of Gaston as he falls to his death at the end of *Beauty and the Beast*. He thought it was funny, but some people were disturbed by it, thinking Satanists work at Disney.

Influences

Monsters vs. Aliens is centred around Susan, who grows to be 49 ft, 11 inches tall after being hit by a meteorite on her wedding day. The film pays homage to classic monster movies of the 40s, 50s, 60s and 70s. The main characters are all modelled on, or inspired by, the following movies: *The Blob* (1958), *Attack of the 50ft Woman* (1958), *Creature from the Black Lagoon* (1954), *The Fly* (1958) and *Godzilla* (1954). Happily Burgess shows the film posters of the time, although he realises the films haven't aged very well. But he loves them just because of that.

He describes a direct reference to *Attack of the 50ft Woman*, where a 50ft woman picks up a guy out of a bar. Her enormous hand is clearly made of rubber, and the actor has to fold her fingers around him. This comes back in the sequence where Susan picks her self-absorbed boyfriend up from the ground: he also helps to folds her fingers around him.

The aesthetics of MAD Magazine, the American comedy parody magazine, was also incorporated in the movie. Important cartoonists were Harvey Kurtzman and Jack Davis, and especially the style of the latter is apparent in the character of the president.

A third influence was Ed Wood JR., the worst filmmaker in Hollywood's history. Burgess loves his films because they are so heartfelt. Wood didn't know anything about filming and his films therefore they have a naive quality. What the crew liked about *Plan 9 From Outer Space* is that the flying saucers wobble; they are clearly floating in a fishing pool. In *Monsters vs. Aliens* the flying saucer is also wobbly.

Another linchpin for the aesthetic value they were after is the best work of Chuck Jones, who worked at Warner Brothers on Looney Tunes and Merry Melodies. Burgess shows a clip from *What's Opera Doc* (1957), a parody on Wagner's *Der Ring der Nibelungen*. Elmer sings: "I'm going to whack the wabbit", and Bugs sings back: "How will you do it, am I inquired to ask?" Just before continuing to the next sentence, Bugs takes a big grasp of air and his chest visibly fills with air. Burgess thinks this adds so much life to the characters. He always uses it when he hears an actor draw his breath on the dialogue track.

Cartoon-like or naturalistic?

Every production begins with determining the animation style: is it cartoon-like or realistic? At Disney *Alladin* (1992) was cartoon-like and *Pocahontas* (1995) naturalistic. At DreamWorks the same goes for *Madagascar* (2005) versus *Shrek* (2001).

After seeing *Toy Story* (1995) Burgess wanted to experiment with 3D. He worked for 6 months on *Wild Life*, but the project was never finished. After that there were no new 3D films at Disney for Burgess to work on, so he took a job at the graphics company PDI. It was later incorporated by DreamWorks which nowadays has two campuses: PDI DreamWorks and Glendale.

At PDI Burgess was one of the only people with a background in hand-drawn animation. After *Shrek 2* he was asked to do some character tests. He treated the character Melman as a 2D character and helped in defining *Madagascar's* style: it is the first 3D film to use the stretch and squash technique from the 2D era. The innovative rigging system that made this possible was a big technological breakthrough. Stretch and squash is also used in *Monster vs. Aliens*; it helps to create an organic feel.

From the beginning *Monster vs. Aliens* was going to be an aggressive technical film, with a real action movie feel in the best 3D stereo that anybody had ever seen. From time to time the 3D turned out to be quite difficult. To make sure that the public didn't get eye fatigue, the crew looked at each days shots wearing 3D glasses. And when they were discussing things, everybody was still wearing the stupid glasses. No fun, according to Burgess: "We were the 3D guinea pigs".

It is of interest that 3D made them work more on the z-axis (with movements in and out of the screen) instead of on the X-axis (from left to right and vice versa), as in traditional hand-drawn animation. It turned out to be really important that the eye-direction between the characters was exactly right.

Working process

Different people in the audience wanted to know about the working process. In most DreamWorks movies the directors are the writers, Burgess explains. The directors do a lot of the first drafts. The biggest creative addition is from the storyboard artists. What Burgess really fought for at DreamWorks is to make sure that when the phase of storyboarding is finished, the boards are kept and not thrown away. Often the directors would say: this board-guy did a great thing, but they couldn't find it anymore. While so much great performance stuff comes from these first stages.

Next the writers make sure the overall structure is right, then it goes to editorial, and only then can the actors do their work. In that phase a lot can change: people like Seth Rogan (who plays B.O.B. in *Monsters vs. Aliens*) or Steve Carell (who did Hammy in *Over the Hedge*, 2006) are amazingly innovative artists who come up with gold. With so-called lipstick cameras the footage is filmed. Often this brings in little things that are incorporated into the animation. Animators have webcams on their computers so they can use the sound file and act along with it.

The main characters

One by one Burgess discusses all the main characters, giving examples of special features he and his team thought of, showing expression tests and footage of different stages in the development of the character and of course the way it ended up in the film. It is obvious that this is always a joint effort, with different departments working together. Special effects, for example, added to Burgess' animation of the moment when Dr. Cockroach, a manic genius, accidentally transforms himself into a cockroach – they provided just that extra bite by providing lots of smoke when he got out of the machine. Burgess points out that the Doctor crosses his fingers behind his back when he steps into his machine – he smiles and says animators are just wired to do things that people may not see.

His department works closely with the Character TD's, who do the rigging and put in all the muscle controls and the joints. It goes back and forth between the departments. Almost all the characters have some kind of built-in dynamics. For example, Cockroach had dynamics in his antennas: left and right antennas could be used separately. Missing Link, a strange combination of an ape and a fish, had fin dynamics and tail dynamics. For extra expression Burgess had earlier used tails for the animals in *Over the Hedge* (2006), and he wanted to do the same for Missing Link and Insectosaurus, who has all kinds of dynamic systems. Insectosaurus (Burgess thinks he subconsciously gave Ed the Hyena of *The Lion King* (1994) and Totoro of Miyazaki's *My Neighbour Totoro* (1988) an enormous love baby) was hand-animated by Burgess, after which it was given a full body simulation. He decides to let his one eye blink just a little later than the other. Most of the time Burgess doesn't like stuff that because it is too easy. There must be a reason to use it, for example when the character just got hit with a brick or is stoned. In this case, the brain of Insectosaurus is so tiny that the information doesn't arrive at both eyelids on the same time.

Gallaxhar, the bad guy, became a creepy fellow with a big head and little tentacles. Earlier at PDI, Burgess had worked on a sea monster. It was the worst rigging Burgess had ever seen; the tentacles were too complicated. He jokes that when he saw Gallaxhar he almost started hyperventilating. He proposed to the directors to make it easier and let the tentacles stay neatly beneath the creature instead of moving around his body. In fact the tentacles are more like legs. They agreed, fortunately, because Gallaxhar clones himself into thousands Gallaxhars. Now the animators could easily make all of them walk by using a walk cycle.

The main character in animation is often the most realistic, believable and sympathetic. The goal was to keep Susan, a plain, insecure girl who turns into the self-conscious monster Ginormica, stylistic as well as naturalistic.

For her a lot sequences were shot in live action. For example, San Francisco was built in a scale version and Line Korsgaard Andersen, a supervising animator who had the physique of Susan, acted the scene. It turned out to be very useful to see her reaction when she stepped on something. Korsgaard Andersen developed the details of Susan's character, because she really seemed to understand what she needed. Burgess concentrated

more on the monsters, although he did develop the wrinkles in Susan's face. He shows how she gets all these wrinkles around her nose when she says the word scratch: "It's so cute".

B.O.B., whose body consists of some kind of gelatine, was the biggest technical and creative challenge of the movie. Burgess and the directors talked about all the things B.O.B. was supposed to do: have a mouth or not, become very big or small, become a puddle, have his eye pop out or travel around his body, grow arms when he needed them, be cut in half, reshape drastically. When the Character TD's saw it they were really scared, according to Burgess. But they managed to do everything asked of them. The B.O.B. taskforce consisted of ten people who worked really hard to get it right. It was a collaboration between his team, who did the performance, and the special effects team. From that department came a test of how the base could look and it was very flowing, and moving. It solved Burgess' problem of how he should walk around. They also found a solution for other difficulties together: B.O.B. had to be transparent, but also have a body mass that gave some resistance if, for example, he sat down on a chair. Terran Boylan designed rigging warpers that could be turned on and off, so parts of B.O.B. could be pushed in and out.

The first figure to be finished was the President. He takes himself seriously no matter how stupid the things he says. For the first time in a slow shot, Burgess let the eye sockets of a character turn upwards. Normally that looks freaky, but in this case it worked. With eye-bone controls, the bone sockets can be moved up and down and twisted in and out, while the a-symmetry of the face was stressed by swinging the jaw around. And when the president talks, his cheeks move his glasses a little bit. Almost invisible, but, as Burgess says: "man, it pays off". The area just beneath the eyes is often stone cold dead, but Burgess is very happy that he managed to 'liquefy' the area.

The President, with his enormous head and tall toothpick body, is the opposite of General W.R. Monger, a solid little bull-doggy guy who barely reaches the president's triceps. Monger catches and guards the monsters and proposes to let them fight Gallaxhar in what is called the War Room scene. Here the reference is to actor George C. Scott in *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb* (1964). For the first time Burgess decided to move the skin on Monger's forehead, which gave him much more expression.

Reference point for the president was John Cleese. For example his strange dance with Jamie Lee Curtis in *A Fish Called Wanda* (1988), where his upper body is very controlled and from the hips down anything can happen. Another reference was Monty Python's *Ministry of Silly Walks*, which is always great to watch (hurray for YouTube). With all his enthusiasm on animation as well as live action film, Dave Burgess has without doubt inspired lots of people not only to watch *Monsters vs. Aliens* again, but also all the other wonderful films he talked about.

This master class was held on Wednesday 21 October.