

J.J. Johnson

Fear and loathing in 3D

A producer's experiments and experiences with a new technique

First steps into using the new 3D technique can be exciting and at the same time extremely demanding – and sometimes the end result is far from satisfactory. The Canadian TV producer J.J. Johnson shares his recent approaches and experiments to introduce 3D into his high-quality children's programs.

Every spring in my hometown of Elmira, a touring fair would set up in a farm field. It was not the best or most elaborate carnival experience, but for a sleepy town of 7,500 people, it was a big deal and was eagerly anticipated. One year, when I was 10 years old, my friend Don Haney and I noticed a new ride called the Galvinator. From outside, the Galvinator looked like a flying saucer; inside everyone lined up along the wall on separate wall panels that could move up or down. The Galvinator would spin so fast that you would be pressed up against the panel and it would lift upwards. The G-force was so strong in fact that you could turn yourself upside down and still be held in place. Now on this particular evening, Donny was not feeling the best, but this was something new and something new did not often happen in Elmira, so we passed in our tickets and entered the machine. It started out fine, the spinning slowly increased and as it did we could feel our faces and bodies get pressed deeper and deeper into the cushioned panels. As

the spinning intensified people started to lift off the ground. It was as Donny and I started to rise up and a black light show began that I noticed he had gone pale. He looked over to me with that desperate “things-are-about-to-get-bad” look and then promptly vomited. Now, puking in any public setting is bad enough, puking in the Galvinator is a nightmare. In the same way the G-force holds you in place, it also holds your vomit. Donny panicked and started thrashing on his panel, flailing to get the puke out of his mouth. And he was successful, his sick became like *The Blob*, a self-aware gelatinous mass that spread out in all directions, seemingly with a mind of its own. A young woman and myself were Donny's immediate neighbors and therefore bore the brunt of his puke-force attack. Unfortunately, we were still glued to our own panels and could do little, save for turning our face, before the inevitable stomach acid contact happened. Did you know that vomit lights up in black light? Well, it does. What unfolded for the next 2 minutes would forever be remembered in Elmira lore and earned Donny the nickname “Vominator”. Producing live-action in 3D for the first time is like riding the Galvinator, it is fun and exciting at the beginning, but sometimes the end result can actually make you sick. So it is with some trepidation that my partners and I at Sinking Ship have started to experiment with 3D production.

Experiment #1

We began, as I imagine most producers do, by trying a 2D-to-3D conversion test on one of our series. We took a short clip from our CG/live-action blended program *Dino Dan*, lifted the original computer-generated dinosaur, then re-rendered it for a right eye perspective and a left eye perspective, then merged the 2 images to create our 3-dimensional sequence. We then replaced the animation on the 2D background and voilà: a 3D Triceratops roaring out towards the audience. Unfortunately, the result was more of a 2D.5 than a true 3D. Because though we were able to affect our animation, we were unable to give separation to the background. We also did not have a 3D monitor at the time (a year ago 3D television sets were still retailing for \$12,000 in Canada), so we were not able to actually see our test until we presented the demo at the PRIX JEUNESSE INTERNATIONAL festival 2010. The audience was suitably wowed, but the experience left us with a few key revelations:

1. Converting 2D to 3D on a CG/live-action series was going to be prohibitively expensive. Not only would we have to re-render all of our animation, but we would also have to find a way to affect the live-action background. The solution seemed to be in a hardware unit demoed by JVC at NAB that

could do 3D conversions on the fly – 2D video feed goes in one side, 3D video feed comes out the other – but even these only promised some separation of elements in the frame. True 3Dphiles (and they are out there) will tell you this is not real 3D, because there isn't separation between absolutely everything.

- Our series was not framed safe for 3D. When Sinking Ship started in 2002 it was just at the beginning of Canadian producers looking to film in high-definition. We eagerly jumped on the 16x9 bandwagon but were always cognizant of being 4x3 safe. Unfortunately, as made clear by our Triceratops demo, our current shows were not 3D safe. Our dinosaur steps forward, leans up, and roars. But as it leans up, its horns leave the top of the frame



Ill. 1: For 2D to 3D conversion shows have to be 3D safe: the Triceratops demo failed as the horns of the dinosaur left the top of the frame

(cf. ill. 1). When you watch it on a 3D monitor, the image seems jarring, one moment you are looking at a beautiful 3D Triceratops in all its glory, the next moment part of it disappears “out” of the TV. You are left searching the area above the TV for its missing horns.

- Converting 2D to 3D on a CG/live-action series was going to be prohibitively expensive. Blair, a partner at Sinking Ship and our resident moneyman, crunched the numbers on re-rendering our animation and buying a JVC con-

version box and nearly fainted. It quickly became evident that converting our live-action series to 3D was off the table... at least for the time being.

Experiment #2

We recently began working with Sheryl Leach, creator of *Barney*, on a new mythological series that features as one of its characters a Unicorn. What better way to impress a potential broadcaster than to show them the Unicorn, say it with me, in 3D. This time, however, we chose to place the character inside a fully computer-generated background; which again

Unfortunately, this experiment still did not help us with the bulk of the productions that Sinking Ship enjoys making, full live-action series featuring real kids.

Experiment #3

On the last weekend of November, we decided to take the plunge and film a full stereoscopic 3D short, 3Dphiles rejoice. We partnered with TVO (TV Ontario), a public broadcaster who is always eager to experiment and play with new technology, and got our hands on a new camera that had recently come onto the market and did not require the massive 3D rig and accompanying

(expensive) technicians. The camera is the Panasonic 3DAG1 which has 2 lenses mounted beside one another, is lightweight (about 1/10th the weight of a 3D rig) and has a built-in 3D guide (this saves hours). Indeed, this new model

meant we had to render the same animation twice, once for the left eye and once for the right, then merge those images over one another. The result was vastly superior to our dinosaur demo. The Unicorn walks through a mystical forest, leaves float off glowing trees and “out” to the audience, the character stops, rises up on its hind legs and neighs. Magical. Also, and this is the part that Matt, a partner at Sinking Ship and self-proclaimed tech geek, loves the most: simply removing the left-eye animation leaves you with a perfectly crisp and clean 2D version.

seemed perfectly suited to our particular needs; a rugged 3D camera that could keep up with bubbly 6-year-olds was relatively inexpensive (retails for around \$25,000, a fully setup 3D rig could cost upwards of \$120,000) and that also would not slow us down.

If I have learned anything from working with kids, it is that their interest can wane remarkably quickly and that the first take is often the best and most authentic. At no point could I imagine a kid being patient enough to wait for us to set a convergent point. Which sadly is exactly what happened. The basic premise of the short is 2 kids



Ill. 2: 3D production is a new experience for the production team and the young actors



Ill. 3: The young actors are impressed by the outcome: they try to pop the bubbles of the 3D short

trying to one-up each other with their bubble-making abilities. The wide shot looked amazing, we had the 2 kids on a couch, a beautiful piano in the background, great separation between elements, and bubbles blowing towards the camera. However, when we moved in for the close-ups, one kid had the piano as their background and the other had a set of bookshelves further in the distance. Because of this difference we had to set separate convergent points for each performer. A convergent point is the point at which everything in front of it comes

out towards the viewer. Think of the convergent point as the television screen and everything ahead of the point pops out. Because we had to set different points to make the image look good and prevent the background from ghosting or mirroring (weird double images were popping up on some of the elements in the background), it looked somehow off when we cut between the kids. As if one was slightly closer to us on the couch than the other. In the end, we opted to tweak one of the close-ups to pick up a corner of the piano and thus

share a common convergent point. All in all, we moved about half as fast as we normally would, had twice as many technical arguments, got half as much coverage, and saw twice as many yawns from our kid performers (cf. ill. 2). Also, I virtually left the first day with a horrible headache from taking the glasses on and off watching good and bad takes. Bad 3D can literally strain your eyes. But the short looks cute and when we screened a take on the 3D monitor we had set up in the kitchen for the 2 kids participating, they immediately reached out and tried to touch the bubbles, giggling as they tried to pop the air around them (cf. ill. 3). I have no doubt that with time and practice we will be able to quicken our 3D filming pace.

As my partner Matt at Sinking Ship likes to say, “we see in 3D, our TV should be in 3D”, and I think for the most part he is right. It is shocking how different watching 3D is to 2D. You feel immersed, like you are in the image. My favorite of all of our 3D tests was watching kids try to pop the bubbles in our bubbles short; it is as if their suspension of disbelief has extended to a whole new level.

Quick and easy 3D production is not here yet, the technology is still finicky and expensive, but in just the last year we have seen incredible advances. 3D is not like HD; it is a whole new bag of tricks, but also offers a whole new way to tell stories and interact with the audience. So keep experimenting, even if it sometimes makes you sick. ■

THE AUTHOR

J.J. Johnson is a partner and founder of Sinking Ship Entertainment, Canada. He is the creator, producer, writer, and director of *Dino Dan* and several other shows.

