Creating the Memories by Bill Kroyer

This article is adapted from the keynote address Bill Kroyer gave at the Ojai Animation Conference, in Ojai, California, on July 22, 1995. The Conference, designed as a retreat for the animation industry, was sponsored by the International Animated Film Society, ASIFA-Hollywood, in association with the Ojai Film Society. When Kroyer gave the talk, he had recently started working as co-director on Warner Bros. Feature Animation's first film, now entitled The Quest for Camelot, which is being co-produced by his wife, Sue Kroyer.

oday, animation is exploding. And with billion dollar animated films, direct-to-video and CD-ROMs, there are big profits to be made. That's OK, after all, it is an art-industry. People forget the hyphen, but you need money to do this art form.

What I would like to discuss, though, is not so much the business of animation, but what it means to be an artist and animation as an art form. I'm going do this from my own perspective, looking back on my career and what I've experienced.

Back in the 1960s, it was said that President Nixon was asked why he didn't think there was a recession. He said, "Well I have a job, and all my friends are working." Well, I'm happy to say that, all my friends are working now. It wasn't always like that ; but now they are and that's part of what's great about the animation industry today.



Bill and Sue Kroyer

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I came out to L.A. in 1975 and immediately went to Disney to get a job. They wouldn't take me, because I didn't have an art school portfolio. Instead, I got a job in a small commercial studio, where my first assignment was erasing the stretch lines off of Mr. Clean's pants, because he looked too virile. My second assignment was to put pants on elves, because they only had shirts on and somebody finally realized they were naked. That is when I learned the two most important principles of animation : It will go by so fast that you'll never see it; and if you can't make it good, make it loud and fast.

I Really Feel Sorry For You Kid...

I finally ended up at Disney in 1977, which was an interesting place to be then. It was the link to the Golden Age. You are probably hearing about how we are going into the second Golden Age, which I think might be true. Yet, in those days everybody sat around and moped, feeling bad about the fact that they missed it.

We used to have guest artists come over who would say, "I really feel sorry for you kid, you missed the Golden Age. Your life is worthless. Why bother ? You weren't there !"

Some of the Nine Old Men were still there in 1977, including Frank Thomas, Ollie Johnson, Willie Reitherman and Eric Larson. But the studio was still stuck in a time warp, technically and creatively. If you asked them why they were not innovating, they'd say, "Because we do what we do best," which meant they just didn't dare touch the formula that Walt had left behind.

If you were an artist who had been transported from Disney in 1941 to 1977, there wouldn't be a whole heck of a lot of technology that you would not instantly know about. You knew about peg bars, reinforcements, pencil tests and the multiplane camera. You might discover Xerox machines and reelto-reel pencil test machines ; but beyond that nothing had really changed.

In the 1970s, the industry was in a real slump. Disney was the only studio making realistic features, and even their films had reached bottom. Then some milestones came up and things started to change.

And Along Came Tron

Many people see **Who Framed Roger Rabbit** as the big milestone. That's the one that made the money. Yes, but there was another that may have been even more prophetic : **Tron**, made by Disney back in 1982. Crusades. Suddenly, I realized we were seeing this little tiny tip of an iceberg of what had been going on for years.

Tron was the beginning. It was the moment when computer graphics made its first contact with the animation industry — like the sperm and the eqg.



David Warner as the villainous Sark in Tron

© 1982 Walt Disney Productions

Every guy in the United States of America that was into computer graphics showed up to work on it. It was like the Crusades.

I had left Disney earlier because I didn't want to work on **The Black Cauldron**. I happened to land in the lap of Steve Lisberger, who was making **Animalympics**. Mind you, this was not the world's greatest film, although it was a feature film that was completely hand ink-andpainted by nine people in a warehouse in Venice, which is pretty amazing. After **Animalympics**, we developed **Tron** and took it to Disney.

Tron became a revolutionary thing. When we first starting working on it, we didn't know how we would do it. It was just an idea about a guy and a computer. But when we showed up at Disney, something started happening ; it was almost like putting a blue light on the back porch and having flies from all over the neighborhood come to it. Every guy in the United States of America that was into computer graphics showed up to work on it. It was like the It was neat, because nobody had ever done it before. There were no experts around. So, I inherited the position of Director of Animation. Luckily, I caught on to it pretty well.

It is incredible when you look at the people who worked on *Tron*, who are now key players at places like Pixar, Rhythm & Hues, PDI and Digital Domain. All these young guys couldn't believe somebody was really going to hire them to do this type of work.



Jeff Bridges is an electronic warrior in Tron. © 1982 Walt Disney Productions

Inner-Penetrating Objects and Fractal Walls

It was great. If we wanted to do an effect, we'd tell these guys, "Invent it." They had no software for it, so they would sit down and write it.

Then they would say, "We wrote some software that does this. So, we would make up something in the story to use it. For instance, they were so ashamed when they showed us inner-penetrating objects. But we thought that was pretty cool and we actually made up a neat character composed of inner-penetrating objects.

On the other hand, I once gave an assignment to do a scene where a ship flies out of a hanger. After waiting eight weeks, I asked, "Where's the scene ?" They said, "Oh man, you're going to be so thrilled. We built a fractal wall." I asked, "What's a fractal wall ?"

The idea is to do things that are cheap and look good, not things that are expensive which nobody notices. That's a cardinal rule of filmmaking.

Well, it was this thing that looked like a rock wall, the kind of thing a background painter could have done in about six hours. They worked eight weeks on it and only they would know it's a fractal wall.

That's a problem you always have. The idea is to do things that are cheap and look good, not things that are expensive which nobody notices. To me, that's a cardinal rule of filmmaking.

Tron was an unusual picture. It's where all this technology came

together and started to be utilized. Looking back now, it was somewhat primitive, but it was weird mix of human effort and technology.

If you watch the credits, you'll see a couple hundred Chinese characters at the end : those are the names of the artists who painted mattes in Taiwan. A year later, that was totally obsolete. Computers could do all that. That's how fast it changed.

The movie had story problems and was not a big hit. In itself, *Tron* did not revolutionize the animation industry, but it did give encouragement to the computer industry.



Building a computer generated solar sailer in Tron.. © 1982 Walt Disney Productions

After*Tron*, I looked around and still didn't see anything great happening in animation. So, I chose to stay in computers and worked at Robert Abel and Digital Productions.

Computers and Crayons

I remember we had the only Cray supercomputer not dedicated to defense interests, which was used for the absolutely illogical purpose of making films. Actually, it wasn't totally illogical, because creating graphics was important. (We got the Cray because John Whitney's father, who had done the very first computer animated films using a World War II bombsight, was known in the defense industry.)

The Cray was a cool computer, able to do six billion computations a second. It was engineered to such a high level of performance, that it was actually designed to crash three or four times a day. And the only people who could start it back up again were people from Cray. So, when you bought a Cray, they sent people who would live with it, called Crayons, in a trailer in the parking lot.

The Cray was so fast that none of us could actually "speak" to it. We first had to speak to VAX computers, which then built up enough information until they felt worthy to approach the Cray. They would then shoot it over to the Cray, which would then compute it.

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At the time, we started doing the first hierarchical animation of figures. This means that when you move an elbow, everything underneath it, like the wrist and fingers, will follow. It sounds trivial now, yet back then people were just starting write this type of software.

The first time I animated a human figure using this software, I did a dancing cycle. Some people looked at it and said, "Wow, how did you do that ?" But one of the programmers said, "That's just key frame software." They usually think that way. They hate to think that it takes a skill that can't be canned.

Then came *Roger Rabbit*, which made big money and showed that animated cartoons could appeal to adults and things started to change. Technology played an important part in that film and allowed animation to be sophisticated and hip again, and business started booming.

Technological Threat

My wife Sue and I started Kroyer Films in 1986 to combine computer and hand animation. Although I enjoyed working with computers, I always missed



Bill Kroyer's Technological Threat

© Kroyer Films

drawing and the illusion of cartoons. I wanted to create something that would allow the computer to blend easily with the pencil, which I still believe is the animator's greatest tool, as it gives one the most freedom to create an illusion.

> There was this heavy philosophical depth to the movie, which the French really appreciated. No one here did.

We put together a software package that allowed a computer to draw out on punched animation paper using a plotter. It was unbelievably fast. Artists used to look at it and you could see them staring into the abyss of their own careers disappearing.

The truth is that computer people like to think that and artists often fear that. So we made Technological Threat, which was about just that. It showed organic cartoon characters being threatened by computer animated characters. We did the former by hand and the latter, of course, with computers. There was this heavy philosophical depth to the movie, which the French really appreciated. No one here did.

Technological Threat spoke to the question of : What is this technological revolution doing to the artist and to art? Well, animation as we know it, is both gaining and loosing, but it's losing less than it's gaining.

The Servant-Master Relationship

Which brings me to what I call servant-master relationship, which is my obsession about how the industry should work. That is, the master is the vision and the servant is the technology.

There has been this battle ever since I've seen these two working together in **Tron**. It's natural, because much of the work we do is technology based ; it's also natural that the toolmakers believe that they are the best ones to use them, but it doesn't work that way. You go to hear Rubinstein play, not the guy who made the piano.

It's one of those things you have to be sensitive about, because you have to appreciate the skill of the person who knows how to use the technology. But there has to be a level of judgment about their ability to use it with artistic vision.

The computer world is a Cartesian world which exists in an XYZ place, which seeks to create an artificial three-dimensional environment. It tries to reproduce real dimensionality, physical space and shape.

That's valid. Yet, in my opinion, much of the magic of our art comes from illusion. That's what makes people's heads get connected. What goes on the screen may make no logical sense, but it conveys very clear emotional feelings which can be really funny, poignant and beautiful. As a matter of fact, the less sense it makes and the more emotional it gets is one way to judge how great it is.

Probably the most famous thing in animation is Mickey Mouse's ears. You can't do Mickey's ears in 3-D. You look at those outfits at Disneyland and they're not right. Mickey's ears are supposed to crawl around, that's why they are cool. It's the art of the cheat, which is essential to the greatness of animation.

Rotoscoping and live-action

reference, for instance, are OK as reference. But it's not OK if it starts taking away the animators' initial vision of how to play a scene. An animator starts with a blank piece paper on which he can create anything, including somebody with both eyes one side of his head — which is perfectly OK.

Live-action reference has very limited uses. The same goes for motion capture, which is essentially the same thing.

I prefer motion to be stylized, because the essential part of the art is movement. You've heard the saying that great animation is not drawings that move, but movement that is drawn. What you are doing is creating drawings that, when looked at individually, may look bad or illogical. But when looked at all at once, they are magical. That's our art form. That's what we do that nobody else can.

So, if you're going to work in computer animation, stylize it ; bring exaggeration and caricature to it. If you do that, then you are taking it to a place that nobody else can. How many artists get to do that ?

Learning to Cope

Technology leads artists to cope in many different ways. One is by learning how to use the tools. But it's interesting how other things happen. I'll give you a brief example from a project we worked on and how our traditional animation staff had to deal with a new medium.

When the story people started working on gags, we discovered was that in video games gags (as we think of them) are almost meaningless.