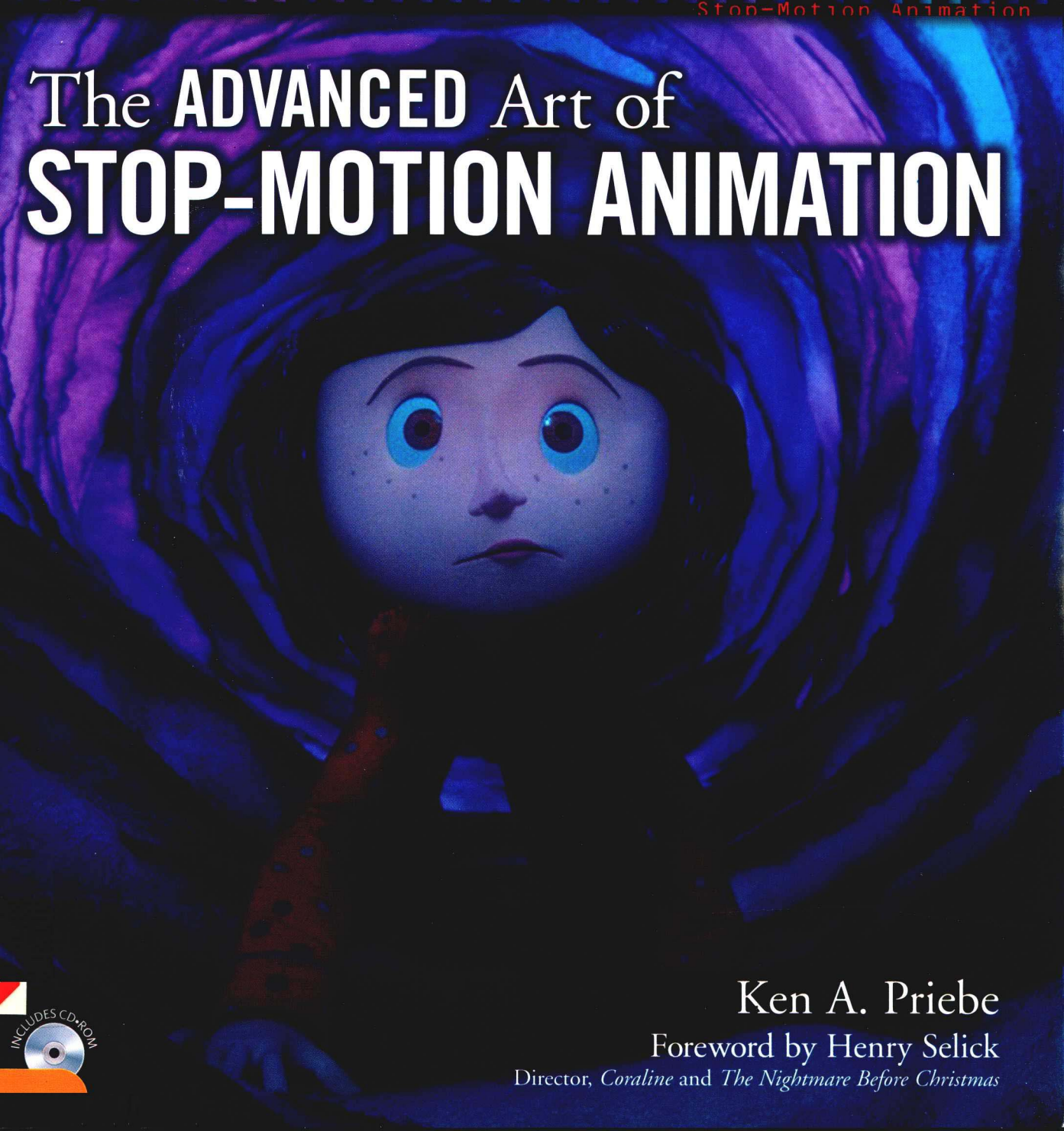




Stop-Motion Animation

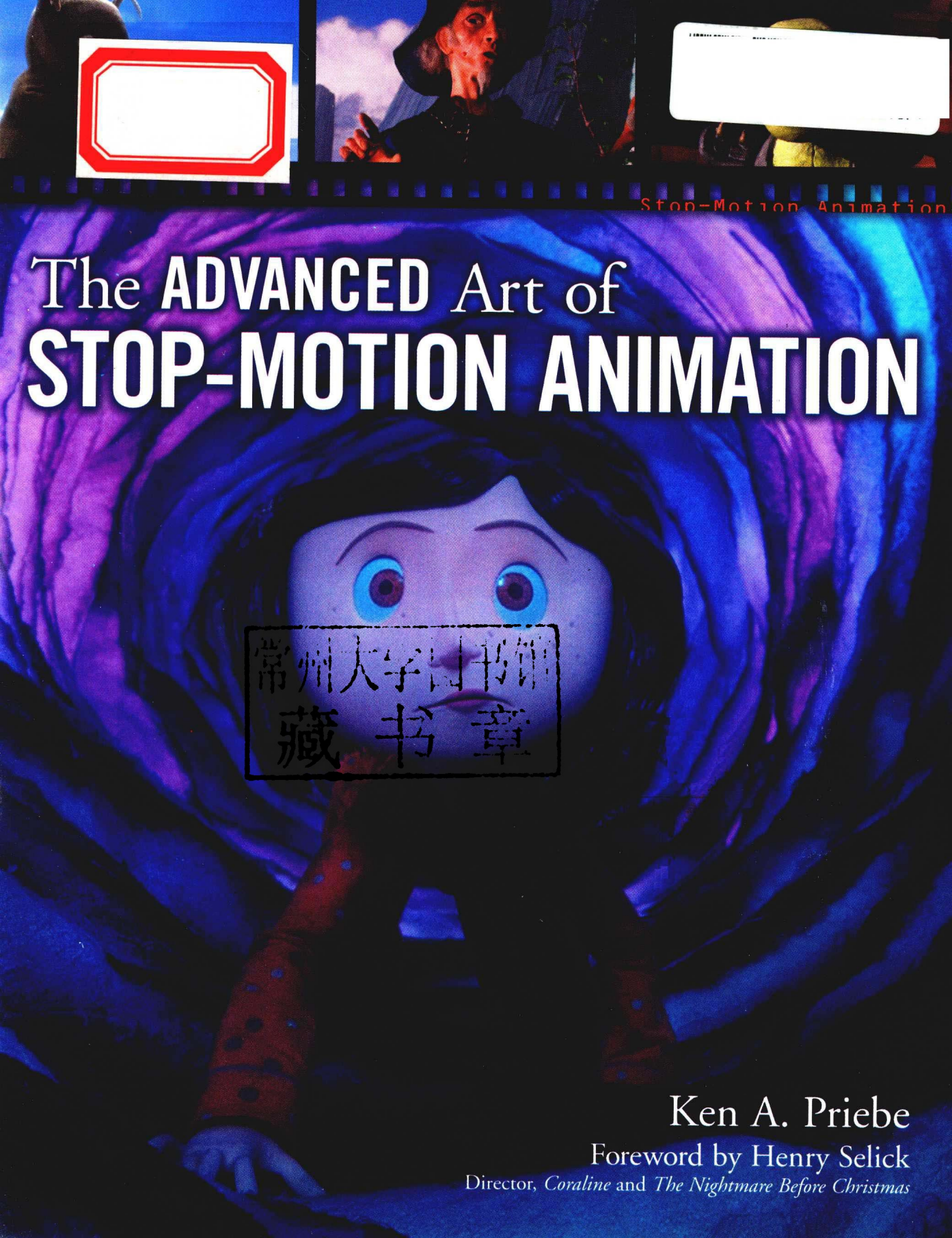
The **ADVANCED** Art of **STOP-MOTION ANIMATION**



Ken A. Priebe

Foreword by Henry Selick

Director, *Coraline* and *The Nightmare Before Christmas*



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**The Advanced Art of
Stop-Motion Animation**

Ken A. Priebe

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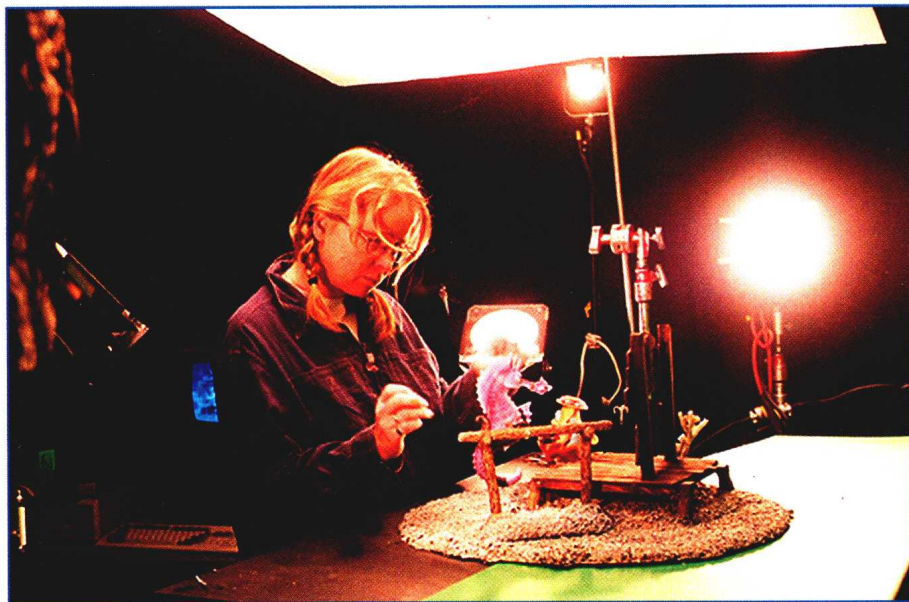
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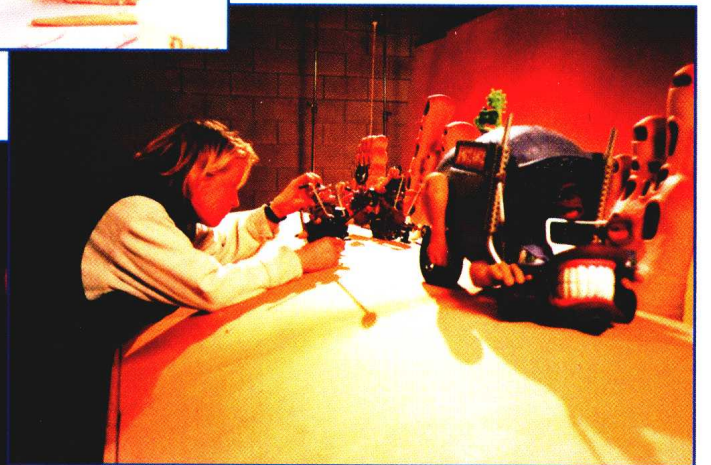
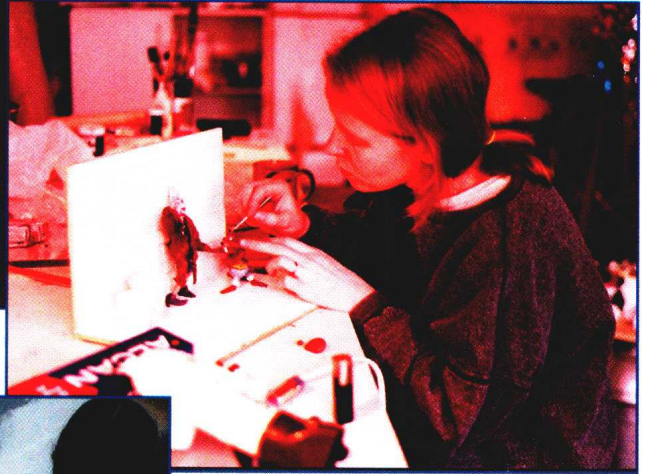
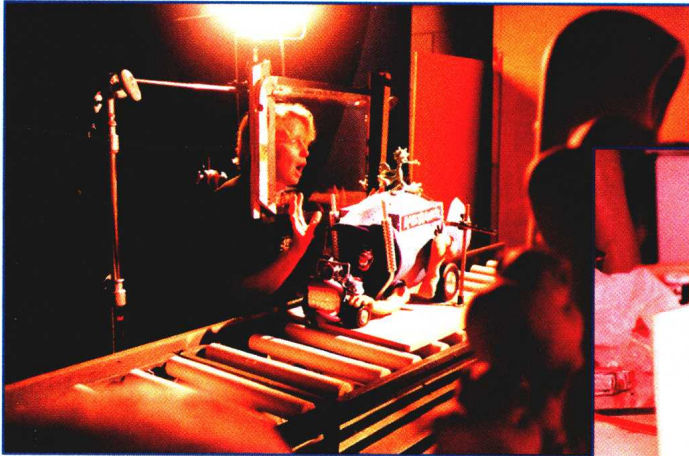
*This book is dedicated, with much love,
to my amazing wife Janet and my children Ariel and Xander.
The adventure continues...*

Tribute to Lisa Jane Gray (1959–2009)



As an additional dedication for this book on stop-motion animation, I am honored to present a photo tribute to Lisa Jane Gray, a very talented artist and contributor to the stop-motion community who passed away very suddenly on July 10, 2009. Lisa Jane was a great talent and a sweet lady whom I had the privilege to meet and talk with on a few occasions, before she left us all too soon. Her career as an animator and director spanned nearly 30 years, including feature films, television series, and commercials. She also taught animation students at the New Brunswick Community College's Miramichi Campus in Canada, and she worked for Cosgrove Hall in the U.K., Egmont Imagination in Denmark, various studios in New Zealand, and several studios across Canada, including several years as an animator and associate of Bowes Production in Vancouver. She is greatly missed by all who knew and worked with her.

(Various production photos courtesy of Bowes Production, Inc. Thanks to Paul Moldovanos and David Bowes for providing these images.)



Foreword

By Henry Selick, director of *Coraline*, *The Nightmare Before Christmas*, *James and the Giant Peach*, and *Slow Bob in the Lower Dimensions*

There are many ways to make movies a frame at a time: drawing them by hand like Walt Disney's *Pinocchio* and Hayao Miyazaki's *Spirited Away*, computer graphics like Pixar's *Toy Story* and *The Incredibles*, 2D cut-outs like the cult feature *Twice Upon a Time*, animating sand or paint on glass, scratching film emulsion, moving pins on a screen, slicing wax and clay, and no doubt other techniques I've never witnessed. But I happen to love stop-motion best.

So much of animation's history has been about the pursuit of making things move smoothly, to hide the artist's hand. When CG animation hit the big time, first as special effects and then with the Pixar features, it delivered on this goal in spades. The animation was perfectly smooth, without a single, unintended bump or jerk. It was sexy and shiny, and audiences ate it up . . . and they still are.

CG can do anything, but it can't do easily what is inherent in stop-motion: give proof of the artist's hand through the inescapable mistakes made and communicate to the audience that what they are watching really, truly exists. It was this part that grabbed and haunted me when I first saw Ray Harryhausen's work at age 5—I knew his Cyclops actually existed!

Why does even crude stop-motion animation have an effect on us? Ken Priebe, the author of this great book, and I share a similar theory: stop-motion connects us to the time when our toys came to life through the power of our imaginations.

My Journey

I didn't plan on becoming a stop-motion director; it just happened. I was going to art school when I was first bitten. I'd made a life-sized figure for a sculpting class and couldn't decide on just one pose. It had simple joints, so I started to

change the pose, looking for something better. In photography class, I began to shoot little series of pictures, changing things in the frame. I desperately needed my artwork to *move*. So, I made the journey west to study animation at CalArts, where I saw a Jan Svankmajer short called *Jabberwocky*. It was a life-changer for me, with powerful images inspired by Lewis Carroll and stop-motion that grabbed hold of you.

While working at Disney, I made a short film called *Seepage*, which featured both hand-drawn animation and stop-motion figures sitting around a real swimming pool. I was hooked and left Disney to work on a cut-out feature, the next-best thing to stop-mo. Having made several short films on my own, they made me a sequence director, and I storyboarded several sequences and pitched in doing some animation.

As my life-without-a-plan unfolded, I did feature storyboard drawings and designs for the claymation sequences on Walter Murch's feature *Return to Oz*. I next did more storyboard work for director Carol Ballard, who had me shoot some second-unit miniatures where I realized I barely knew anything about lighting real stuff. More lessons learned.

I eventually got going with a bunch of stop-motion MTV spots I wrote and directed, which I'm still proud of to this day. I built stuff, lit and shot some, and animated a few, but it was here that I started to put together a small crew—people who were better than I was at a given task. I hired better animators than me, like Eric Leighton, Anthony Scott, and Tim Hittle from the revived *Gumby* series. And when I landed nine Pillsbury Doughboy commercials, the team grew again. I got the go-ahead for my animated pilot, *Slow Bob in the Lower Dimensions*, hired Pete Kozachik to light and shoot it, and the team grew once more. And when Tim Burton, an old friend from my Disney days, called to ask if I wanted to direct *The Nightmare Before Christmas*, we were all ready to step up and make that movie.

We worked for three and a half years on *Nightmare* in some old warehouse space in San Francisco, and when the film was released in 1993, my extraordinary team of artists and I felt we'd done Tim's tale proud. That same year, though, CG beat out Phil Tippett's stop-mo dinosaurs for *Jurassic Park*. And in 1995, a year before our second film, *James and the Giant Peach*, came out, *Toy Story* was released, and stop-motion features were over. Except, they weren't.

Your Journey and This Book

Here it is, 2010, and stop-motion, the most ancient and magical form of animation, is more popular than it's ever been. There are TV series like *Robot Chicken*, three or four feature films are going into production at once, more students at art and film schools are taking up stop-motion, and, from the amount of new stop-motion bits on YouTube, more kids of all ages are wrestling toys, clay, dolls, and puppets to life than at any time in history. *And* there are now multiple books on stop-motion where none existed before, including the one in your hands. Ken Priebe's *The Advanced Art of Stop-Motion Animation* is the best book on the subject available. Ken has incredible knowledge of stop-motion history (I thought George Pal invented replacement animation, and I was certain *Mad Monster Party* was the first U.S. stop-motion feature . . . Ken knows better). He shares great how-to info for all the steps and many of the choices in making your own stop-motion film, from making puppets to rack-focusing your camera lens to types of lip sync. He includes wonderful interviews (including one each with my friends and comrades-in-arms, Pete Kozachik and Trey Thomas, who both worked with me on all my features). He covers stop-motion education, stop-motion blogs, and festivals. Ken seems to cover it all, and he covers it well. I'm both hurt and a little angry that Ken didn't have the decency to have been born 20 years earlier so that we could have copies of his book when we first started *The Nightmare Before Christmas*.

I stand on the shoulders of Willis O'Brien, Ray Harryhausen, George Pal, and Jan Svankmajer, and I owe my name in stop-motion to my brilliant crew members like Anthony Scott, Eric Leighton, Paul Berry, Trey Thomas, Pete Kozachik, and Joe Ranft. Let *The Advanced Art of Stop-Motion Animation* be your leg up, and good luck with the great films you're going to make.

Henry Selick, April 2010

Acknowledgments

Once again, going through another several months of late nights and caffeinated beverages working on another book, I could not possibly have conceived it without the generous help and support of so many people, who deserve all the thanks in the world. First and foremost, thanks to my Lord and God Jesus Christ for “animating” the whole process, sustaining me, and making all the connections to bring it together in one piece. Extra-special thanks to my amazing wife, Janet, for her assistance, patience, and encouragement, and to our little ones, Ariel and Xander, who rock my world and keep making me smile. Special thanks to my extended family in the U.S. and Canada and my church family at Cedar Park for their encouragement, prayer, and support. Thanks also to the students and staff of VanArts and Academy of Art University, to my friends from the Vancouver chapter of the Association for Computing Machinery’s Special Interest Group on Graphics and Interactive Techniques (ACM SIGGRAPH), and to my friend Steve Stanchfield for his continued support after initially getting me started and hooked on animation many years ago.

Extra thanks to my special interview subjects—Seamus Walsh, Mark Caballero, and Chris Finnegan at Screen Novelties, Pete Kozachik, Trey Thomas, Bronwen Kyffin, Larry Bafia, Webster Colcord, Marc Spess, Ryan McCulloch, and Justin and Shel Rasch—for the gift of their time and wisdom, and the images they shared to complement their words. Also, a second helping of thanks to Justin, Shel, and Bronwen for the extensive contributions they made in other parts of this book, in particular the sections on puppets and stereoscopic photography. This book is that much richer with your contributions, and I definitely could not have written these sections without your generous assistance!

The first chapter on the history of stop-motion features alone has a huge list of people to thank for providing permission and access to images, research, and detailed information about the films: L.B. Martin-Starewitch, Dan Goodsell, Jerry Beck, Rick Catizone, Michael Sporn, Rick Goldschmidt, Mark and Seamus at Screen Novelties, Yoram Gross and Mimi Intal at Yoram Gross

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For their contributions, assistance, advice, support, and sharing of images for chapters and sections on puppets, digital cinematography, visual effects, education, and animation festivals, I would also like to extend special thanks to Melanie Vachon, Don Carlson, Dave Hettmer, Ron Cole, Frida Ramirez, Emi Gonzalez, Lucas Wareing, Chayse Irvin, Henrique Moser, Gary Welch, Shawn Tilling, Brett Foxwell, Anthony Scott and K Ishibashi, Patrick Boivin, Steve Stanchfield, Nick Hilligoss, Rich Johnson, Richard Svensson, Carlo Voegelé, Gautam Modkar, Jason Walker, Pete and Sue Tait, Talon Toth at Protodemon Studios, Roni Lubliner at Universal, Patricia Dillon and Sophie Quevillon at the National Film Board of Canada, Chris Walsh at Sheridan College, Stephen Chiodo and Max Winston at CalArts, Beth Sousa and Matt Ellsworth at Academy of Art University, Jurgen Kling of Weir doughmationfilms, Elizabeth Seavey at Bendle High School, Lee Skinner of Little Scholar Productions, Peter Lord and Amy Wood at Aardman, Galen Fott of Bigfott Studios, Erik Goulet of the Montreal Stop-Motion Film Festival, and Jeff Bell, James Emler, and Christa LeCraw from the VanArts Digital Photography Department. Thank you all!

And to all who contributed to the appendix on the stop-motion community, (on the companion CD), this book is a gift to all of you for the way you encourage and support all of us in pursuing this mysterious craft: Marc Spess, Mike Brent, Shelley Noble, Yasemin Sayibas Akyez, Ron Cole, Santino Vitale, Season Mustful, Jeffrey Roche, Sven Bonnicksen, Don Carlson, Jeremy Spake,

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If this was like a verbal acceptance speech, I'm sure the band leader would be starting the music and rushing me off the stage by now, so last but not least, I have to say an extra-special thanks to Colin Gray, David Bowes, and Paul Moldovanos for helping me honor the memory of Lisa Jane Gray in this book, Anthony Scott for his kind assistance, Henry Selick for the gift of his amazing foreword, the entire staff of Course Technology, editors Dan Foster and Lionel I. Orozco, and especially Heather Hurley for initially asking me to write another book!

Thank you *all*...and to Ray Harryhausen, Happy 90th Birthday!

See you in the movies!

Introduction

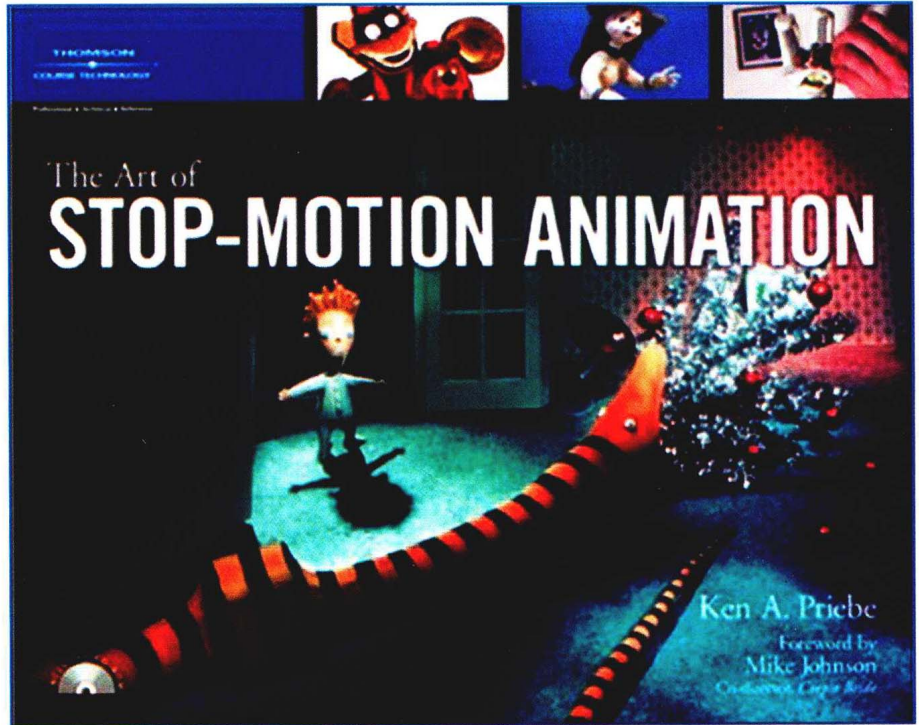
Stop-motion animation is in the hands of the people. I say this as a pun. As a craft, the act of animating in stop-motion requires a person to literally place a puppet in their hands and bring it to life, frame by frame. The other meaning is that in the past few years, the art of stop-motion has experienced a renaissance that has not only brought it more prominently into the big film studios, but also brought it into the hands of regular people worldwide. It is happening in cramped suburban garages and spacious studio soundstages. It is also making its way to more homes, schools, websites, and mobile devices in a manner that is unprecedented in our time.

When stop-motion first started as an art form, it seemed to be kept as a mysterious and closely guarded magic trick. The publicity of the time behind films like *King Kong* (1933) and the feature film *Hansel and Gretel: An Opera Fantasy* (1954) revealed false information to the masses about just how stop-motion was really done. For decades following, fans of stop-motion films had to rely on stamp-sized photographs in science-fiction magazines to try and guess how they were made, and then take a stab at it with a Super 8 camera. Once they had completed their films, there were very limited venues for showing them to anyone other than themselves. It's a different world now, and the secret is out, so today's filmmakers are gladly faced more with questions about how to tell a captivating story than about with the technique itself. In addition to the tools becoming more accessible, the Internet now provides a free platform for everything from simple experiments to full-fledged films. In the online universe, artists not only can share their films, but also can connect with other artists who can offer advice and support to make them even better.

What is also amazing about this growth for stop-motion animation is how fast it has recently happened. In 2006, I wrote my first book, *The Art of Stop-Motion Animation* (Figure I.1), as a practical guide for how stop-motion films were made.

Figure I.1

The Art of Stop-Motion Animation (2006) by Ken A. Priebe.



At that time, we were just starting to see the advent of digital SLR cameras and their use for stop-motion photography, both in feature films and independent projects. Blogs and online journals for documenting productions had been around for a few years, but they were really just beginning to become more popular. Facebook, Twitter, and Livestream did not exist, and YouTube was brand new—no one was really sure how long it would last. And now, look at what has happened. Just a few years later, and stop-motion is everywhere—online, on television, and in theaters. People still love it as much today as they did when Kong first emerged from behind the trees on Skull Island. At its heart, the basic techniques behind stop-motion have not changed, but we now have the capacity to present it in the sharpest resolution possible, combine it seamlessly with computer graphics, and even shoot it in 3D. Just imagine what the next 4 years could bring!

My own experiences with stop-motion animation and other life adventures have also evolved since I last published my first book. A month after the book was released, my daughter Ariel was born, so the summer of 2006 kind of felt like having two babies at once. That fall, my friend Leslie Bishko, who was involved with the Vancouver chapter for the Association for Computing Machinery's Special Interest Group on Graphics and Interactive Techniques (ACM SIGGRAPH), asked if I would be interested in being part of a stop-

motion event to help promote my book. I was delighted for the opportunity and was able to participate in an evening of presentations and panel discussion with none other than Anthony Scott (animation supervisor, *Corpse Bride*), Peter Muyzers (visual effects artist, *Corpse Bride*), and Larry Bafia (animator from Will Vinton Studios and PDI). I was asked back to speak for various Vancouver SIGGRAPH events related to stop-motion, and became an active member and volunteer with the chapter, helping to organize their annual Spark FX and Spark Animation festivals and bring inspiration and innovation to the community (<http://www.siggraph.ca>).

Another opportunity that came my way was being asked to develop an online stop-motion course for the Academy of Art University's Cyber Campus, an online version of the degree programs offered through their school in San Francisco. Using my book as a required text, I got the chance to expand on the instructional sections through two online courses, ANM 380 (Stop Motion Animation 1) and ANM 382 (Stop Motion Animation 2). Subsequently, I have taught these courses online and helped more students improve their skills in the stop-motion craft. The process of building these courses also involved flying down to San Francisco to shoot animation and puppet-building demos in their production studio, which was hard work but a great deal of fun. On one of these visits, I had the opportunity to meet in person the technical editor for my first book (and this one), Lionel I. Orozco of Stop Motion Works (Figure I.2).



Figure I.2

Author Ken Priebe (left) and technical editor Lionel I. Orozco (right) at the Academy of Art University's Cyber Campus studio, proud to welcome you to another book!

As 2009 dawned, I continued my work as a mild-mannered admissions advisor for VanArts (Vancouver Institute of Media Arts) by day and a crime-fighting stop-motion instructor by night, both for students at VanArts and online for the Academy of Art University. Another addition to my family was also preparing for his debut; my son Xander was born that summer. Meanwhile, the stop-motion universe was generating a lot of buzz from the release of the feature film *Coraline*, which had advanced the art form into new territories of innovative storytelling, and many other independent films were being noticed as well. Riding the crest of this wave, I was approached by Course Technology with the idea of writing another book that would go into more up-to-date detail on the art form. Several months later, you are holding that book in your hands.

My first book, *The Art of Stop-Motion Animation*, was written as a practical guide to the basic principles of stop-motion filmmaking, providing a solid introduction for anyone new to the medium. The focus of this new volume is to take a closer look at the techniques of stop-motion that were touched on only briefly in the first book and to cover some advances in the art form that have only come into fruition since 2006. You will find new techniques for building puppets, including the technology behind rapid prototyping of computer models for stop-motion production. You will read more detailed information on camera rigs, effects, and shooting stop-motion with a digital SLR camera, including stereoscopic photography (to make your films in eye-popping 3D). The basic principles of animation covered in the first volume are expanded into specific applications for character performance, and there is more material covered on visual effect compositing techniques. The history of the medium, this time around, puts more focus on stop-motion films made in feature-length format, including several obscure films that have never been documented to this extent. Also, whereas the first volume featured six interviews with other stop-motion artists, this new book presents eight new interviews with some of the best and brightest in the field, spanning everything from big studio productions to low-budget indie filmmaking.

If you are a fan of stop-motion or any other kind of animation, I trust you will find plenty of good reading material in this book. However, because it's an advanced volume, if you are new to learning animation and want a book for guidance on how stop-motion is done, I would recommend my first book. The basic principles covered in *The Art of Stop-Motion Animation* are important to grasp before moving on to the more advanced techniques covered in

this book. All things considered, there is only so much a book can accomplish in covering the vast array of skills required for stop-motion, but my hope is that both volumes together will provide you with a good launching pad for your own creations. The vast resources for stop-motion available online and the help of other enthusiasts should also be continually tapped so that we can all continue to find new ways for telling stories in this medium.

Tools and technology will always continue to change and become more advanced. However, in his essay “What Is Cinema?” the noted French film critic Andre Bazin reminds us, “The dream of creating a living human being by means other than natural reproduction has been a preoccupation of man from time immemorial: hence such myths as Pygmalion and Galatea.” We may be able to digitally remove the strings and rigs from our modern-day puppets, but deep inside ourselves we are simply fulfilling the dreams of those who graced the Greek amphitheaters and medieval marionette stages with that simple vision: to create the illusion of life.

Welcome, read on, and enjoy this magic between the frames.

On the CD

The companion CD for this book contains QuickTime videos of various animation exercises and clips that are referenced within the text for your own enjoyment, study, and analysis. The CD also contains two special appendices in pdf format, which represent the growth of stop-motion education and the online stop-motion community, celebrating the work of several artists who share their work through their websites and production blogs.

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