

The
Animator's Eye

Adding Life to Animation with Timing, Layout,
Design, Color and Sound



FRANCIS GLEBAS

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**Adding Life to Animation with Timing
Layout, Design, Color and Sound**

**FRANCIS GLEBAS
PHD IN FANTASY**



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On the DVD



DVD Contents

On the DVD you'll find the complete three minutes and 30 seconds long animated film, *The Animator's Eye*. It's in full color with score and special effects. You can also watch a version that tracks the animatic along with the finished animation.

In addition, you can see the early attempts at creating the story. These are very rough drawings which were done to explore the various ideas to see if they had merit.

Included are the following animatics: *The Tragic and Comic Sack*, *Duplicating Sacks*, and *Why Did the Chicken Cross the Soccer Game?*

Also included is a video showing how I draw Iggy including drawing tips and tricks. It's always helpful to

watch how others draw. And for animation reference, there's a video demonstrating various gesture movements. This also includes lip sync reference.

I would like to thank the following people for their help with the making of *The Animator's Eye*. First and foremost is Hans Karl who created the musical score that added the final illusion of life to the film. You can reach him at his website www.hanskarlmusic.com. J. D. Stewart provided audio production services for Hans. Chris Siemasko created the special effects of the eyes flying into the heavens for the final shot. Chris can be reached at Chrissiemasko.com. Bryan Cox provided the special effects for the transformation scene from the alligator to the bunny girl. Ryan Glebas edited all the animatics. Audio journey music courtesy of Michael Hammer michaelhammer.com

You can reach me online at francisglebas.blogspot.com

You can also find inspirational audio journeys to help you relax and get in touch with your inner creativity by Toni Pace Carstensen.

Toni Pace Carstensen is a certified clinical hypnotherapist, meditation teacher, and Reiki master.

Her healing practice combines guided visualization, age regression techniques, and Reiki energetic healing to assist clients in fulfilling their full potential.

She also has extensive experience in the entertainment industry with multiple Emmy award nominations and frequent work as a visual effects producer on feature films.

More information can be found on www.creativityconnection.com



Preface



The Animator's Eye is your unique opportunity to journey inside a burning brain and watch the creative process at work! *The Animator's Eye* is the documented demonstration of the creative process at work, as it applies to bringing an idea to life using various animation tools and techniques.

There are many books available on the various aspects of animated film production. I am not the best animator, cleanup artist, layout artist, background artist, composer or editor. I will refer you to sources to further train your animator's eye in these areas. What this book offers is to see how the whole process of making an animated film fits together.

It's ironic that you can actually learn more from mistakes than you can when something appears seamlessly perfect. You'll see behind the scenes, including the mistakes as well as the successes. These mistakes can be embarrassing, but if they serve to instruct then it's worth it.

This book offers an overview for the novice as well as new ways of looking at old truisms of animation, such as the 12 principles of animation. Frank Thomas and Ollie Johnson did the animation world a great service when they presented their 12 principles, but what if there were more hidden principles? What if each phase of production had its own

principles of animated life? These principles of animated life apply if you're drawing, using cutouts, clay, computer-generated graphics or zombie bodies, and they apply to each stage from idea generation, animation, design, staging, color and sound.

We'll demonstrate the whole animation production process, beginning with the creative process of capturing of the original idea, through story development, animation production, art direction, production design, compositing and sound through to the completion of an animated film, as well as thoughts on distribution. Nowadays, anyone has the ability to have their own production facility right on their desktop. We'll look at various software packages available for animation production. *The Animator's Eye* film is a combination of traditional, digital 2D and computer graphics.

This book is not going to tell you what to do. Instead of a "how-to book" it's more like a "how-to and why-to book." You'll learn "how-to" but more importantly "why-to." We're going to train your animator's eye to get you to see and think in new ways about animation so you'll know why you're making your particular creative choices.

Warning! This is not an ordinary book. It is actually a movie and a book! *The Animator's Eye* film is included in this book as a flipbook as well as on the DVD. If timing is everything, how can you learn about animation without the element of time? Flipbooks allow you to study the animation in motion. You can flip as fast or slow as you like and the speed of the animation changes. You can even make it go backward.

My goal for this book is to provide a unique learning experience about bringing things to life through the medium of animation. Hopefully it may help you, the reader, become more alive as well. There's nothing worse than being a zombie.

Acknowledgements

I've been bringing things to life with animation for a long time and have learned from so many people in so many ways that it's hard to decide, let alone remember, who to thank. Instead of naming names, I'd like to share a story about the film *Incredibly Loud and Extremely Close*. It's the story of a boy who loses his father during the 9-11 tragedy. In order to process his grief, he goes on a journey, meeting hundreds of people, sharing his story with them and theirs with him. Without spoiling the movie, there's a simple close-up shot of a chain that symbolizes all of the interconnected stories that hold our lives together. We're supported by the interconnected stories of countless people, some of whom we may not even appreciate how they have helped us.

I am grateful for the chain links connected to all of my artist friends who generously shared their trade secrets with me. I'd also like to thank the "links" of artists that I haven't met but who have shared their inspiring work via the World Wide Web.

I want to thank the wonderful folks at Focal Press, for without their help this book wouldn't have existed.* This includes the editors, readers, layout people, marketers and distributors, all of whom provided interconnecting links to bring this book to life from the original idea to the finished book you hold in your hands.

I discovered something wonderful after completing my first book, *Directing the Story*. Through emails, personal

introductions or comments and reviews on the web, I learned that my book touched people in ways that I couldn't have imagined. So in advance, I'd like to thank you, the reader, whether you're a fresh beginner or lifelong expert of the wonderful world of animation.

And, in spite of the fact that I said I wouldn't name names, I wish to thank my wife for her love and support during the marathon of making this book. And my son, Ryan, for the inspiration he's brought to my life.



*Dave Bevans, Gail Newton, Anais Wheeler, Chris Simpson, Joanne Blank, and Lauren Mattos.



Chapter One

My Introduction



Come on the journey to the center of the eye. Well, actually I'm inviting you to come on a journey to the center of my brain. However, since you'll be reading the account of the journey into my brain, you'll be doing it with your brain. As with any journey, what you'll gain is experience and brain exercise.

The journey began for me with my first book. Well, it really began when I first started working for Disney in their

story department, and I realized how much I didn't know about storyboarding and storytelling. Every morning I'd get in early and type up notes about what I was learning. I would have felt like SpongeBob absorbing so much knowledge, but he hadn't been invented yet. I learned more in my first six months at Disney, being surrounded by so many incredibly talented and driven artists, than I did during my entire schooling. It was like every artist around me became my teacher.

It was several years later, during the time that I was directing *Pomp and Circumstance* for *Fantasia 2000*, that Alex Topete, the head of the cleanup department, asked me to speak to his crew during a lunch hour. I agreed and immediately panicked: "What am I going to talk about?" Well, I started talking to the crew and about two hours later they were still asking questions. I guess I had something to say after all.

Shortly after that talk, Jack Bossom, the head of Disney's artist development program, asked if I would speak to some new artists at Disney about a film topic of my choosing. I decided to talk about time in the editing process and as an example I chose to analyze the finale sequence of *Back to the Future*. It was amazing to study a small sequence in frame-by-frame detail. That's the only way a film will yield its secrets. The first time you watch a film you are under the spell of the story if, of course, the director's done his or her job. It's only during the second and third viewing that you can begin to see how it's put together. That's because the director is directing your attention so that you don't see how it's all put together; all of the effort is put into seamless storytelling. This is also why a magician never reveals his secrets by performing a magic trick twice—it would ruin the illusion.

So I presented "Time and Editing in *Back to the Future*" and this led to being asked by Tenny Chonin, the next head of artist development, to present this material to the whole studio. That's how this shy artist now found himself in front of 200 people presenting Disney lunch-box lectures on color theory, narration versus the hero's journey, and more.

Along the way I began to mentor story trainees at Disney, eventually teaching story and storyboarding at Walt Disney Imagineering UCLA and Gnomon School of Visual Effects. I found I really liked teaching as much as I enjoyed animation production. (Both of my parents being teachers might have had something to do with my passion to teach.)

As long as I had good filmic examples to show, talk about and analyze, I didn't need notes. The examples were triggers for my memory.

However, something unexpected happened when I taught: my students told me that they had never heard of some of the stuff that I was teaching. I suppose that is normal for a teacher to hear coming from students new to a subject, but this wasn't just coming from new, inexperienced students. One woman said that she went through the whole [insert X famous film school here] and had never heard of some of the material that I was teaching. Another woman had been directing commercials for 15 years and this was new to her as well. One of the student's teacher evaluations said that they had a sneaking suspicion that I was a "super genius." Now don't think I'm big-headed, because the only other "super genius" that I know is "Wile E. Coyote, Super Genius." Being a super genius doesn't seem to help him, as he's always getting blown up! What all this feedback did clue me into was that I had something to teach and my own way to communicate it clearly, using examples that demonstrated the principles.

I completed my first book for Focal Press, *Directing the Story: Professional Storytelling and Storyboarding Techniques for Animation and Live Action*. The wonderful folks at Focal Press then asked me to start another book, *The Animator's Eye*, and my first thought was—Panic!—"I don't have anything to say." So here we are and I'm inviting you to journey with me into the very beginning of my second book, on the animator's eye.

Introduction

Before we begin our journey into the world of animation, you need to know that I'm not going to lie to you. Animation is hard work that requires a lot of learning and practice. But if you picked up this book it means you probably already know that and want to explore animation in spite of the obstacles. Animation is a labor of love. The first time you see your drawings begin to move it's like magic. It's time to learn some new magic tricks.



Here's a quick overview of what you'll learn in the upcoming chapters.

The Animator's Eye

We begin by meeting our tour guides to the nutty world of animation and learn how you how to find ideas and bring them to life.

The Mad Science of Animation Right

You'll learn the tools you need to create your very own animation laboratory. We'll also learn the nuts and bolts of the animation process with the most important idea of all—the story.

That Reminds Me of a Story...

Here Iggy and Scared Bunny will show you why stories are so powerful and how they introduce their secret "Roller Coaster" way to come up with dramatic and fun stories.

Visionaries of Fantasy, Reality, and Surrealism

Bonus: On the book's website. We'll also meet visionary animators and discover surprising secrets of the animated universe, like the first animation to see faces. And we'll discover some of the tricks they used to create their worlds.

Myths of Creation

Bonus: On the book's website. Creativity is one of the most mysterious aspects of the animation process. We'll learn the stages of creative thinking and how to bring animation to life. It's easy and fun to learn to ask the right questions.

Secrets of Drawing

We learn that drawing teaches us how to see and draw the world around us with the illusion of life. First, we'll learn the pros and cons of different drawing techniques to create solid drawings. We'll explore force, gesture, and animation classic, the flour sack. Finally, we create character designs and secrets for driving stories.

The Secret of the Animated Illusion

The secret of animated life is creating a believable illusion of a real world filled with entertaining characters creating a story. We'll learn the basic steps of animating a scene as well as exercising your animator's eye.

We'll learn the animation principles of the master animators. These animation principles fall into three categories: timing, animation principles of inner life, and staging to show the audience what's going on. The next three chapters will explore these principles.

The Laws of Animated Life

Here we dive into the world of physics to understand why we have the principles of animation. If your character's movements are based upon physical laws, then they'll be more believable as if they're real.

Cartoon Physics

It's all well and good to create believable characters but this is animation we're talking about. We're not shooting live action, we want to have some fun! Let's break some rules with cartoon physics. It's not $E=MC^2$, but $E=\text{motion} \times \text{fun!}$

Adding the Brain for Inner Life—Look, I'm Acting!

Once we can animate objects with believable mass and volume we're ready to learn the second set of principles—animated acting and inner life. We'll look at Iggy on the emotion wheel and how lip sync is ventriloquism in very slow motion.

Locomotion of Bodies without Slipping and Sliding

The body also tells a story so we'll explore body language and how to get around on two feet or more. And we'll learn about that ever-present danger for animated characters, the dreaded banana peel—sometimes they're invisible.

Watch Out for Zombies!

It's checklist time. Finally we'll learn how to spot zombies. One secret is the eyes. With their empty eyes, they move but don't move us. Remember, just because something moves doesn't mean that it's alive.

Creating a World

Now we put on the hats of the art director and production designer to learn the third set of principles to create worlds for our animation—staging for clarity. We'll learn the process of laying out animation, creating style guides, color scripts and designing and painting background.

Rules for Clarity of World Building—Design Style Guides

We'll learn the rules of design and how to design everything using a style guide.

Laying Out the Space

Layout is really a verb. It's the process of arranging imaginary things in three-dimensional space onto the two-dimensional picture plane guiding the audience where to look.

The Wonderful World of Emotional Color and Color Scripting

Like music, color is a magical element that guides the viewer/listener's emotions. We'll learn the value of color scripts for continuity and tracking the emotional journey of a story.

Painting Backgrounds

Here's a demonstration of the basics of painting backgrounds.

Putting it All Together in Post

Once we've completed our animation it's time to assemble all the pieces into a movie. The final secret ingredient that creates the final spark of life is sound. Music tells us how to feel. Remember, judicious editing is your friend and your audience will thank you for it—in other words, keep the story moving.

Special Effects

What would movies be without special effects? Animation has its own brand of special effects with an additional spice of life.

Compositing Layers and Editing

Once the animation, backgrounds and special effects are finished, it's time to put it all together and this process is known as compositing. We'll get to see how the layers combine to create the final image using the secret ingredient, blend modes.

Finish with a Big Bang!

Sound adds life and music adds emotion. We're lifted out of the deadly silence into a world orchestrated with colorful timbres all to the beat. We'll learn some basic recording, mixing and mastering techniques and a simplified way to think about music. We'll also explore software that generates complete music.

Evolution of The Animator's Eye

Now we get to watch the whole process in action. Beginning with the initial swirl of ideas evolving into a story, we'll then watch the creation of storyboards, characters and settings, through to production of the final finished production.

Documentation of Preproduction

The Animator's Eye flipbook and film went through many incarnations. We'll explore how the creative process affected why certain decisions were made and how they evolved. We'll see how the constraints that I had on the book affected the film as well.

Documentation of the Production and Postproduction

The biggest problem that affected the production was the fact that there wasn't enough time. Even during production, changes had to be made for clarity, comedy and other creative improvements.

The Birth of Iggy and Scared Bunny, or Who Let these Two in Here?

I've worked with Iggy and Scared Bunny before. Here we'll learn where they came from, how they evolved, their history and how they came to take over the project.

How I Learned and Got My Animator's Eye

I've been involved with animation since I was a four year old watching the first animated series produced specifically for television, *Crusader Rabbit*. I started making movies as a teenager and followed a path in art and film production. Here's some of my early art and I show what's wrong with it so you won't have to make the same mistakes. It's also for inspiration—we all start from humble beginnings. The greats stay humble, always remembering there is plenty more to learn.

I also share how I got into the business, in spite of when in a job interview I referred to "stretch and squash" as "squish and squash."

It's Time to Say Goodbye and Let You Fly

How do we keep the dream alive? Where do you go from here? That's up to you, your imagination and your animator's eye.

The Flipbooks

On the edges of this book you'll find flip books. A flip book is a simple form. You flip through the pages and the images appear to move.



It's very simple to flip—hold the book binding in one hand and the edge of the page slide through under the thumb of your other hand.



But, where's the sound? There is no sound—it's a silent complete film with the wonderful music created by Peter Dinklage.



You can find additional material on the DVD or CD-ROM. See Iggy holding up the DVD.

Introducing Iggy the Pig and Scared Bunny

Who better to teach animation than two animated characters? They've even got references. You'll meet them before their fame, when they were working for me in a bunch of projects that never got off the ground. They say the projects failed because of my fear of flying.



IGGY: I think we need a better name for this book. *The Animator's Eye!* What kind of title is that? What is it, a medical book? I thought we were going to teach about how to avoid creating zombies! How about, *Iggy and Scared Bunny: Zombie Hunters!*

BUNNY: But there's more to it than just avoiding zombies. We'll learn about creativity.

IGGY: But the title doesn't even mention us? Why isn't it *Iggy's Fantastic Guide to the Animator's Eye!*

BUNNY: Because it's not about you, I'm in it too! It's about the 12 classic animation principles and how there are actually more than 12!

IGGY: Then why don't we call it *Iggy's 101 Principles of Animated Life and How to Avoid Zombies in the Process with a Little Help from Scared Bunny?*

BUNNY: *The Animator's Eye* is a look at what it means to be an animation artist, how they think and how they see the world differently from most people. It's about how to train your eye to be more imaginative and give it the animation know-how to share that vision with the world.

IGGY: I give up. Welcome to *The Animator's Eye!*



So what is the animator's eye? The animator's eye is one that sees life everywhere.



WHAT DOES THIS HAVE TO DO WITH ANIMATION?

Occasionally, you might see Iggy making this protest. I'm including many things in this book that I have found inspirational to the training of my animator's eye. They've

not all been directly related to animation. Besides, if I only gave you what information you already knew from within the field of animation, how could you learn anything new? Feel free to skip around, reading what you find interesting and helpful. The animator's eye and mind grow in mysterious ways.

Iggy and Bunny were actually an afterthought as part of this book. Actually, Iggy and Scared Bunny had cameos in my first book, *Directing the Story: Professional Storytelling and Storyboarding Techniques for Live Action and*

Animation. I've known Iggy and Bunny for a long time, and I've put them into this book, they kind of took over. I'm including them about how to give your characters life. Just let your characters surprise you! My problem was they interrupted me while I was trying to focus on writing the book. Excuse me. I'll meet you in the next book.

Author exits book.

AUTHOR (off screen): Iggy, put those fireworks down!





Chapter Two

Mad Science or Magic?



Why Would Anyone Animate?

Why would anyone in their right mind ever animate? But animators are not in their “right” minds, they’re in their left and right minds, seeing things that mere mortals do not.



Animation runs at 24 frames per second (30 for video). One minute of animation thus requires 24×60 seconds, or 1440 frames per minute. An average animated feature runs 90 minutes, so that means $1440 \times 90 = 115,200$ -plus backgrounds, rough animation, and storyboards. Why on earth would somebody do this to themselves?

Why is it only with animation that we measure the work in terms of counting the drawings? Do we ask bricklayers how many bricks they used to build a house? Do we ask carpenters how many nails they used? Do we ask race car drivers how many miles they’ve driven? I actually don’t have

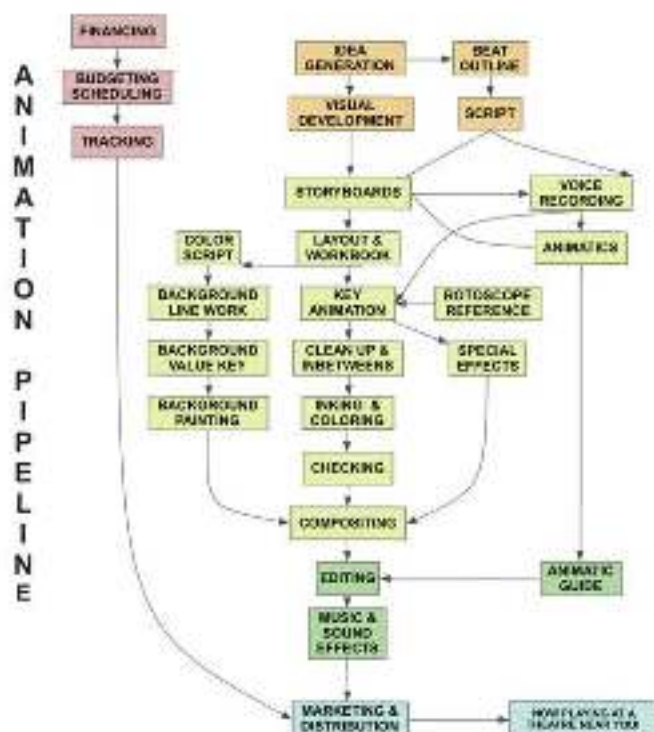
an answer, but it’s puzzling. Here’s another quandary—why do people expect you to give them a drawing? You wouldn’t ask a bricklayer to give you a brick.

Animation is a labor of love. It’s overwhelming in the amount of work, the cost, the time and creative energy needed. Why are so many people so passionate about it? How can they best channel their energy so as not to lose their spark during the work? These are some of the questions we’ll look at during our journey.

Animation Process Pipeline

We’re not only going to learn each stage of the animation process, but we’ll see how all of the production stages of animation fit together. You then can specialize in the area that you’re interested in or you’ll have the knowledge to make a complete film yourself.

What are the steps of creating animation?



The pipeline of animation falls into three main sections: preproduction, production and postproduction, followed by marketing and distribution.

Preproduction is where it all begins, including story development, script writing, production design, storyboards, and animatics. At this stage a film might get a green light or go ahead to start production or head back for further development. If it goes back to development or is canceled, not much is lost in terms of costs (except for artist egos).

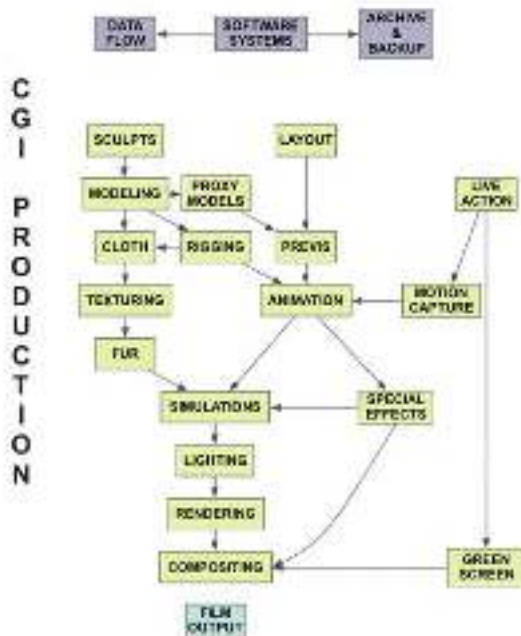
Production is where the real work and real money come in, to bring the preproduction to life. This includes the creation of style guides, layouts, timing sheets, workbooks, animation, cleanup, and inbetweening of characters and special effects. It also includes voice recording.

Postproduction is where it's all put together. This includes compositing of the images, editorial, sound design, and music scoring.

Finally, the film is ready for marketing and distribution.

Computers have varied this process, but more in terms of the technology utilized for the steps rather than a change in the process itself. Some of the steps of computer animation are related to live action being that they work in a virtual 3D space with lights.

Computer graphics has additional processes—previs, modeling, proxy models, rigging, texturing, blocking, camera, lighting, animating, procedural systems, rendering, and other stages with exotic sounding names, like sub-surface scattering.



*CGI = Computer Graphics Imagery.

Check Your Checklist!

You wouldn't blast off to the moon without a checklist, would you? To make sure you had maps, food, water, tools, air, and enough oxygen, creating an animated film is not as complicated as rocket science. You're going to be creating thousands of files. Organize your files for completing your project. Hierarchical folders for your computer will help you find the files you need.

Checking has always been an important part of the process. Since there is so much work necessary, there is so much to check that somebody has to check that those errors don't survive. At Disney, they actually had workers whose job it was to check that elements were created and that all of the colors were correct. They also had the job of removing dust from the plastic cels like dust magnets.

Part of checking can be a simple checklist. In *Atul's Checklist Manifesto: How to Get Things Right*, he describes how to create and utilizing checklists. Checklists are created by experienced people. When Murphy's law states that anything that can go wrong will at the worst possible time, then checklists are a way to prevent his intruding, maddening law. Atul describes how to create them and have documented their efficiency in catching errors. If it's good enough for them, then it's good enough for you. It's good enough for you to create life and not worry about any of our characters. It's good enough reason for you to start making checklists, remembering them for years and checking them twice.

We can use checklists for story flow to track characters and need to insure that the story is driven by characters' actions.

Checklists can be used for continuity and to make sure the structure and point. Checklists are useful for animating. The principles of animation have been applied to really life.

Checklists are also a valuable tracking tool to monitor progress that the film is hitting its deadline milestones. The checklist for this book included four pages of spreadsheets to track progress. The book itself required multiple checklists just to keep track of the progress.



**MAKE SURE TO CHECK
YOUR CHECKLIST!**

And when you need to take a break to get refueled, bring your checklist to the supermarket.

written and which illustrations were still needed. Anytime you're dealing with more items than you can keep in your head, you need a checklist. For me, that's about seven items.

Creating Your Very Own Mad-Science Laboratory of Animation



I don't know about you but I always wanted to have my very own mad-science laboratory. What is it about animation that makes me think about this? Maybe they're both spaces to bring things to life. So you need a place to create—your very own mad-science laboratory of animation.

It's truly amazing that today it is possible to have your own animation studio on your desktop complete with a DVD with surround sound! This was unthinkable not too long ago. Sure, you could make your own films with a 16mm camera but could you mix a score for it too? Could you make copies for worldwide distribution? Now you can. The game has changed.



What do you need to design your own mad-scientist animation laboratory? We'll look at a hybrid of traditional, 2D digital animation and 3D computer graphics used in the making of this book. While its emphasis is on digital 2D, the principles of animation design apply to 3D as well.

The traditional process of animation consists of hand drawing on punched paper. The punch fits onto pegs which register the paper so the animation doesn't jump around. The paper drawings are inked onto acetate cels. These

sample content of The Animator's Eye: Adding Life to Animation with Timing, Layout, Design, Color and Sound

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