

one

CHAPTER



Drawing a New Course in a 3D World

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At its basic premise, *this book seeks to open your mind to the world of possibilities when designing with Maya and Photoshop. To that end, put aside your current design capabilities, and think how life might be if your images were not constrained by two dimensions, by your illustration skills, or by the depth of your photo library. The combination of Maya and Photoshop present the graphic artist with the opportunity to expand beyond the limitations of the real world, to knock down the tired old walls and build beautiful new palaces of creative expression. By cutting the restraints, the addition of Maya to your creative toolbox will open up your world, allowing you to push forward into a place you've never been; a place where anything is possible.*



Let's Work Together

Maya and Photoshop have a symbiotic relationship. Although they are very different programs, they complement each other well. For example, you can create textures entirely in Maya, or you can bring them in from Photoshop. Scene lighting is largely handled in Maya, but you might tweak certain effects in the final render by working on it into Photoshop. All in all, complete images and individual components move back and forth between the two programs with great regularity. As an example, in Chapter 4, you'll learn how multiple renders from Maya can be assembled in a layered Photoshop file, to create the most highly detailed images for print. And in Chapter 7, you'll learn how UV mappings are exported from Maya into Photoshop, where you can easily paint and modify them before bringing them back into Maya. With the ability to create layered Photoshop files added in Maya 6, your creative possibilities are increased exponentially.



Maya 6 provides an enhanced workflow to and from Photoshop. This latest version of Maya reads and writes native Photoshop PSD files. Through this tight integration, you can fully explore your layered textures in Photoshop, with the PSD file directly linked to your Maya model. This provides a straightforward texturing and painting methodology. With the support of the Photoshop PSD format (version 6 and later), simple painting workflows allow for the following:

- The use of any Photoshop file as a Maya texture
- The instant update of Photoshop-modified PSD files within Maya, upon refresh
- The conversion of layered PSD files to Maya layered textures
- The construction of layered PSD files from Maya, thus allowing you to paint an object's color, bump, and specular channels separately in Photoshop
- The creation of “lipstick” sketches in Maya, using the 3D Paint tool, thus allowing you to create a guideline object for painting within Photoshop

Lipstick sketches are especially helpful to show Photoshop artists where to paint. This method is best used when you have a model with UVs that lack sufficient direction for the artist to follow. (You might think of it as painting between the lines when the lines would not otherwise be visible.)

Photoshop artists can apply their existing skills to Maya in a number of ways. Here are just a handful of examples:

Wilder Than the Wildest Thing If the real object is not available, you can create (or re-create) it (as you'll see in the following examples and throughout the book).

Stairway to 3D Heaven You can push the limits of the real world by combining 3D models with photographic images to create convincing mockups.

Born to Revise Once a 3D model is created, you can animate it, recolor it, retexture it, relight it, rotate it, resize it, and reposition it to your heart's content, thus allowing for complete flexibility. “You want a green suit? Bring in the green light.”

Pop's Not Just for Music Painting textures on a 3D model can lift your images off the page by adding amazing detail and depth to your graphic designs.

Buy a Model or Just Look Like One You can purchase 3D models to jump-start your designs. Need some furniture or a specific vehicle? Cool. Need to modify that furniture or vehicle? Even cooler.

If you are purely a Photoshop artist at present, your career can only benefit from expanding your knowledge and capabilities. The precedent has been set by the motion picture and video game industries. There is no turning back. Our audience expects nothing less than magic, and as artists we must learn how to make that magic or face a career change. Now that might seem extreme to some, but take a look back to see how far the field of graphic design and illustration has come in the past 20 years since the advent of the Macintosh.

At present, learning 3D or Maya—or at least learning how to incorporate Maya into your work—will allow you to break away from your less adventurous competition. The expansion of the medium is a given. We're doing things today that have never been done before. Tomorrow, we'll be doing things that we can't dream of today. For those who feel we have moved mountains so far, we'll soon be moving entire planets.

If you've given some thought to learning Maya and entering the world of 3D, this first chapter will give you just a taste of what's possible at the infinite buffet. Although the world of 3D can seem intimidating to the 2D artist, it needn't be. You can go about it two ways: learn Maya yourself, or collaborate with a Maya artist.

If learning 3D seems too time-consuming in your busy life, at least consider incorporating 3D into your 2D graphic illustration world. By collaborating with Maya artists, you put your toe in the water and add depth to your portfolio. But you may find that once you've had a taste, you'll want to begin exploring Maya on your own.

In that spirit, we're going to show you how having Maya available in your tool palette gives you artistic freedom and new, exciting challenges as well. Chapter 2 will provide more information on the basic concepts of 3D, as well as detail the way that Maya and Photoshop work together. But for now, we'll start with a mock project that's sure to stretch any artist's imagination.

Maya and Photoshop Walk into a Bar ...

To illustrate working with Maya and Photoshop, I took on my own project. I was looking for an example of how a 3D workflow might enhance the creative possibilities of a Photoshop artist. Although this fictional job might seem a bit over the top, that is its intent.

Let's say I have been called on to help with a marketing campaign pitch for a hotel chain that's looking to launch a string of Tiki bars at their resorts. "Oh, wow," I think to myself, "a Tiki bar."

Now *that's* not so original, right? But the more I look into the subject, the deeper I'm drawn into the research. And as always, the Web provides a wealth of reference material and endless inspiration. Newly fascinated with the world of Tikis, I embark on a quest to research the art of Tiki-making, frittering away many hours browsing the Tiki-wares listed on eBay and other fabulous websites such as tikifarm.com. In fact, it's the Tiki Farm that draws me in with the promise of a seemingly endless supply of unique and wonderful Tiki mugs and other supplies (see Figure 1.1). So I called the Tiki Farm and asked for permission to use their fabulous Tiki bar as inspiration for this piece.



Figure 1.1: The Tiki Farm website

Creating a Tiki Bar

The hotel marketing squad wants their new string of Tiki bars to make a huge splash, and they're willing to consider some really wild and different approaches to marketing. They want state-of-the-art, Internet-equipped dens of frozen cocktail indulgence. Polynesian kitsch meets the wired age. As the designer, I'm faced with a splendid dilemma: how can I work Internet terminals into a Tiki bar? How can I not only pull it off, but make it really cool?

After a considerable number of ideas are thrown into and dumped out of the creative blender, I came up with *the* idea: build the Internet terminals *into* Tikis ... that's right ... the world's first Tiki Net terminals!

Creating a Tiki Terminal

Corporate management has decided that the Tiki terminal will be one of the main highlights of the hotel chain's Tiki bars. To conceptualize the Tiki terminals, I began by scribbling a wild array of drawings (as shown in Figure 1.2).

The Tiki terminal incorporates a standard computer into its design. Starting with the idea that the Tiki should house (and hide) the computer itself, it is decided that a small form factor is required for the case and a flat LCD screen will be necessary for the display. Taking this into consideration, a flat-screen monitor will fit the bill perfectly. I will suggest to my client that they use an Apple iMac in the actual design, as the small domelike computer will easily fit into a Tiki base.

As the conceptual work proceeds from the 2D design stage, I begin to see the limitations of designing on a piece of paper. I soon realize that the next step is to start making small 3D models. Lacking the 3D computer design experience, I head out to the art supply store to pick up some air-dry clay and plasticine. Upon my return, I whip up a flurry of small Tiki terminal designs out of clay (as shown in Figure 1.3).

Figure 1.2: The Tiki terminal concept drawings

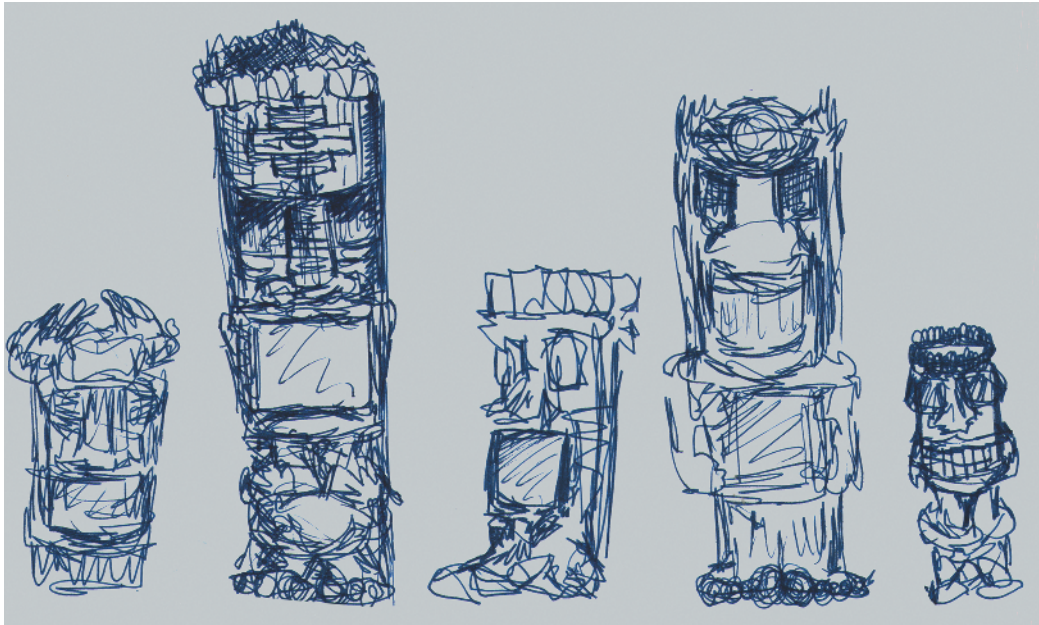




Figure 1.3: Early Tiki terminal clay models

I struggle with how to position the computer monitor. Most of the early designs show the display screen *inside* the Tiki's mouth. The design direction takes a change of course when I decide to have the Tiki *hold* the terminal in his hands instead. Most of my clay models follow this route. Finally, I unwrap a brand new 2 lb. block of plasticine and feverishly create the masterpiece shown in Figure 1.4.

When the plasticine mock-up is shown around, it becomes an instant hit. The bartender whips up an extra-special frozen concoction in the blender, and a mambo contest is held at lunchtime in the Tiki's honor. When my team returns from an extended lunch, they're hit with reality: now that there's a solid idea, how can they incorporate the Tiki terminal into the Tiki bar design that's taking shape in Photoshop?

Although the plasticine model is pretty cool, it's still a colorless six-inch-high hunk of clay. The team needs to place photo-realistic Tiki terminals into the Photoshop image, and they need the flexibility to try variations in color and texture to fit the decor. Inspiration strikes when I recall a segment about Maya on one of my favorite television shows, TechTV's *The Screen Savers*. A computer-generated model will allow the team all the flexibility they need to finish off the concept work.



Figure 1.4: The final Tiki terminal clay mock-up

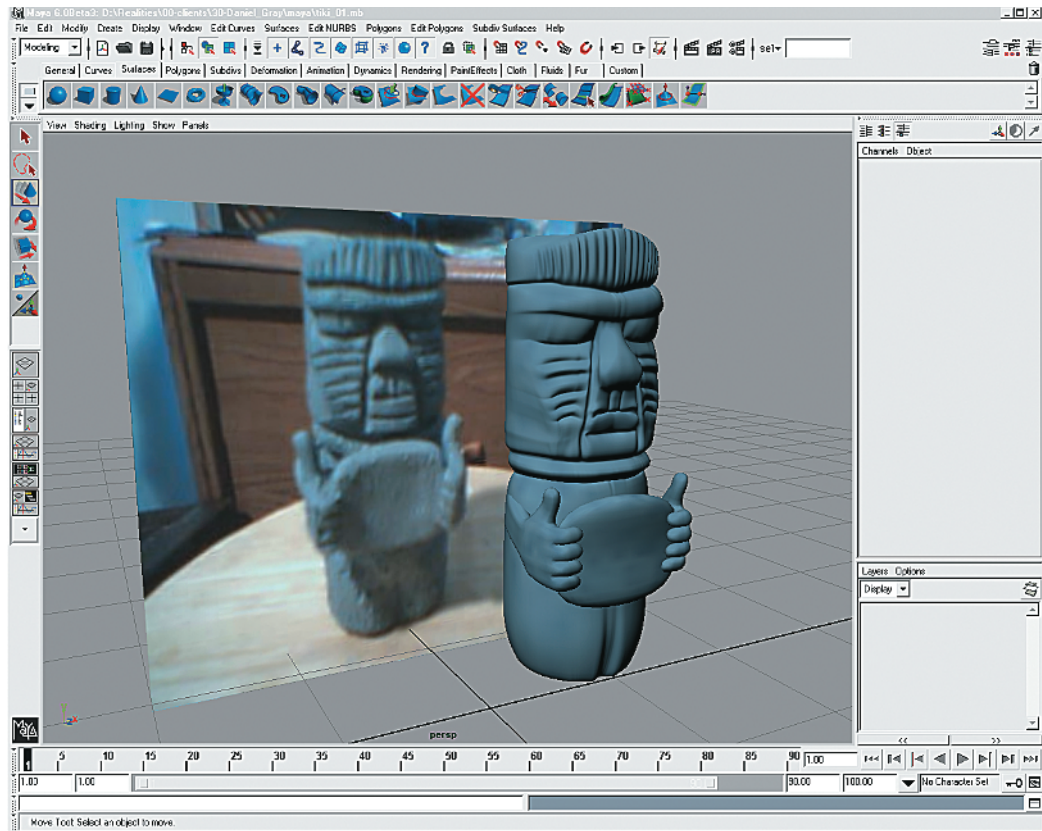


Figure 1.5: The Tiki terminal model in Maya, with the original in the background as reference

Lacking the expertise in 3D modeling and rendering, I decide to call in a Maya 3D pro. As there's no category for Maya 3D pros in the Yellow Pages (just yet), I phone a few friends in the know and soon find myself in contact with real-world Maya expert, Marc-André Guindon. After exchanging a few e-mails, I send a few digital photographs of the clay mock-up to Marc-André, who sets about creating a model of the Tiki terminal in Maya (as shown in Figure 1.5).

What took me days to create in actual clay, Marc-André was able to perfect with his stellar Maya skills in a few hours. Figure 1.6 shows a wireframe view of the Tiki terminal. Further, the Maya model is much easier to modify, whereas once my air-dried clay models hardened, I was out of luck. And while the plasticine model could be reworked, it only stood 6 inches high. I wasn't keen on spending a week (and a small fortune) building a life-size replica out of plasticine, nor would I have had the time or resources to build a physical scale model of the room to fit the Tiki. The process of mocking up projects like this in real life represents not only a significant investment in time, but in physical resources as well. Faux-finishing techniques take more effort in paint than they do in pixels. Materials can be imparted more readily in the virtual world, when compared with the real world. For instance, a gold texture can be applied in an instant with a shader, rather than in ages using the arcane technique of gold leaf.

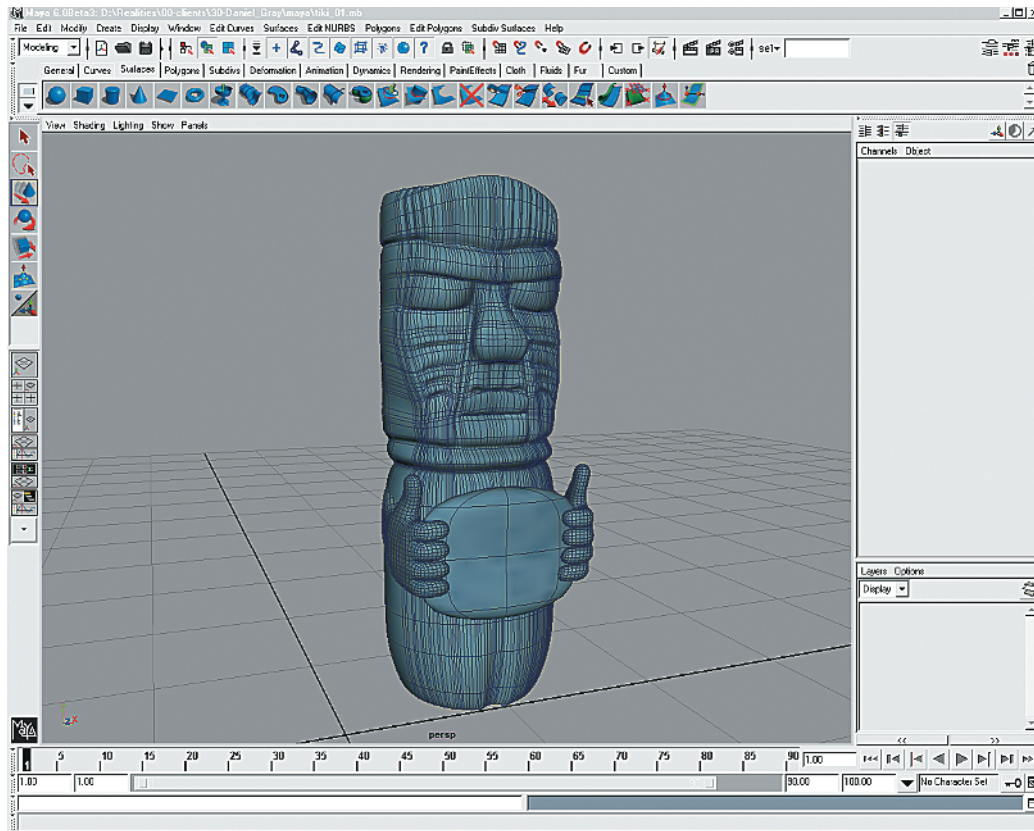


Figure 1.6: *That's not a mystical tablet in the Tiki's hands; that's a flat-screen monitor!*

Lighting and color are all important. Figure 1.7 shows the Tiki terminal in Maya, as Marc-André applies a screen shot to the Tiki's flat-screen monitor and begins the lighting work. As he's working on this stage, I'm rounding up a Tiki bar photograph from the kind folks at the Tiki Farm (see Figure 1.8). Although the Tiki bar photograph isn't of super-high resolution, it's close enough for us to continue with the mock-up work.

Once I have the Tiki bar photograph in hand, I send it to Marc-André, who promptly brings it into Maya to work on positioning. We decide to have two Tiki terminals to match the two barstools in the photograph. Each Tiki terminal is to be angled slightly outward, facing the barstools and following the boomerang shape of the bar. Figure 1.9 shows the scene in Maya, with the Tiki terminals perched on top of the bar. Different screen shots have been applied to each of the Tiki terminals, and the lighting is adjusted to jibe with the lighting in the Tiki bar photograph. Marc-André sends me the first test render (shown in Figure 1.10), and I'm absolutely ecstatic.

I'm blown away, seeing my crazy idea come to life in Maya. With deadlines tight, I promise not to ask for any changes other than a slight upward scaling of the Tiki terminals, to match the size of the bar and barstools. The next morning, Marc-André makes the tweaks, cranks out the final rendering, and puts it up on the FTP server.

Figure 1.7: The screen shot applied

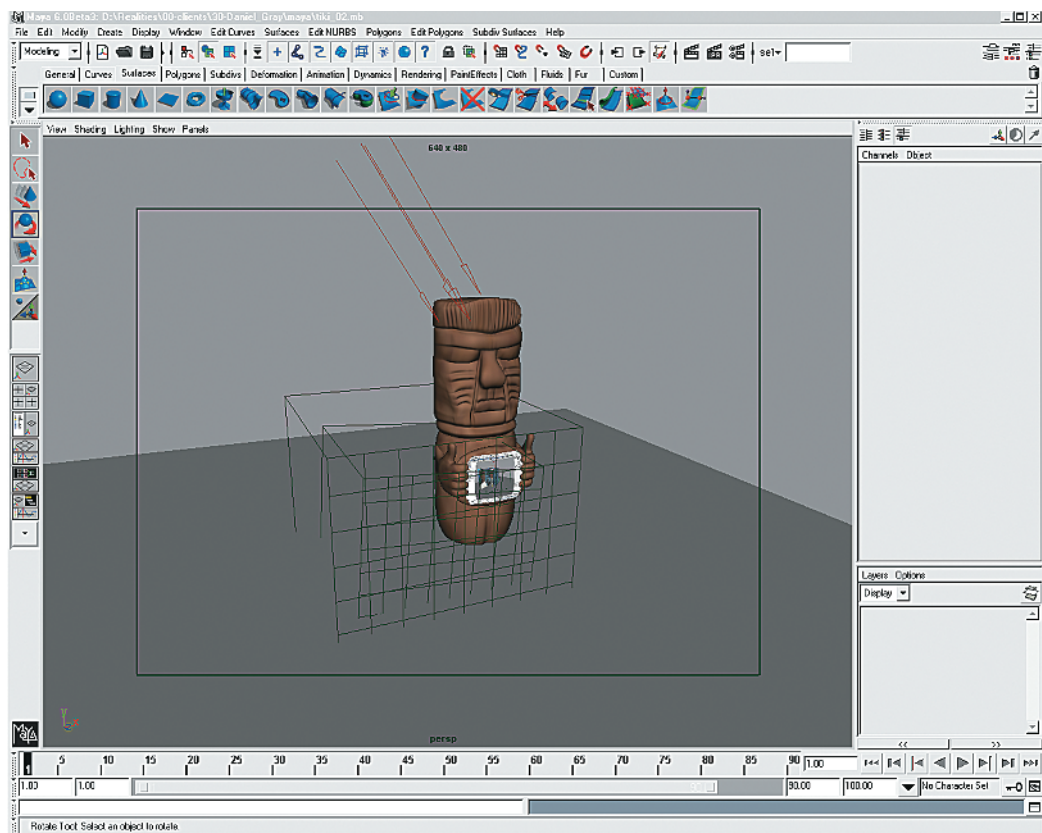


Figure 1.8: The Tiki Farm's fabulous Tiki bar



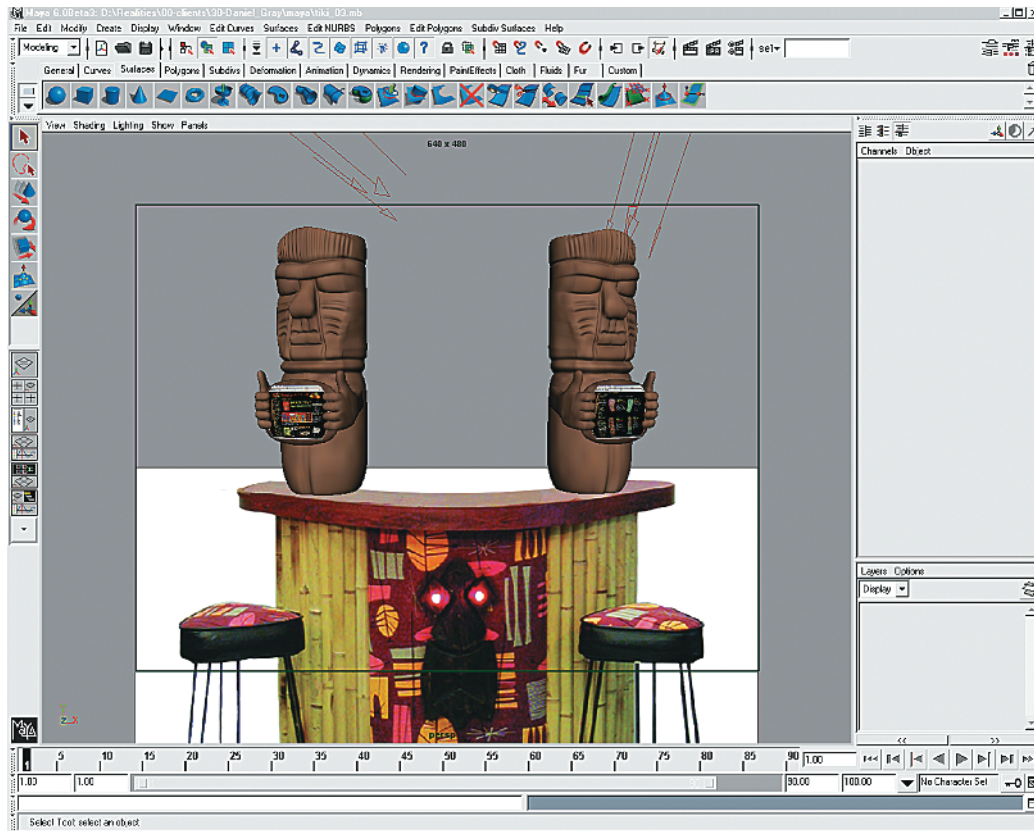


Figure 1.9:
Everything in
position in Maya



Figure 1.10: The
first Tiki terminal
test render

Figure 1.11: The final 2048-x-2048-pixel (2KB) Tiki terminal render



With the fabulous final 2KB render of the Tiki terminal models in hand, I bring the image into Photoshop and begin cranking out the Tiki bar composite image. I've determined that the fastest way to produce the image is to use three layers: the background, the Tiki bar, and the Tiki terminals. I purchase a number of suitable royalty-free stock photographs from istockphoto.com and settle on a pair of lovely tropical images, as shown in Figures 1.12 and 1.13.

I place the tropical scenes on layers in the composite Photoshop file, make a tight selection on the bar image, and copy and paste it into the image. There's a good bit of chunky fringe, so I set about softening that up with the Smudge tool. With the smudge work done, I jump into the final rendered image and make another tight selection, which I copy and paste into the composite. Marc-André kindly rendered shadows with the Tiki terminals, so I set about making them work with the bar surface. Once the muscle work is done, I finish up by applying a Film Grain filter (Grain 2, Highlight Area 3, Intensity 1). Within a short time, I've come up with a pair of suitable mock-ups for the marketing execs to marvel over, as shown in Figures 1.14 and 1.15. (Note the problematic fringe that surrounds the barstool legs.)

If my client wants more, I can build a patio floor in Maya and perhaps a small rock wall and some additional foliage behind the bar, to provide more perspective. As it is, the image is a bit rough, but certainly acceptable. With the comp of the Internet-equipped Tiki bar in hand, the design guns turn toward the next big element in the campaign, when the crew rolls back into the studio the next day.



Figure 1.12: The palms are a bit large for scale in this shot, but we'll try it.



Figure 1.13: Nothing whispers tropical like a nice thatched roof.



Figure 1.14: A Photoshop rough of the Tiki terminals and bar



Figure 1.15: Whoops, we forgot the keyboards!

Marc-André Guindon—Maya Expert

Marc-André Guindon (www.realities.ca) is a Maya expert extraordinaire. Aside from knocking out Tiki Terminals in his spare time, Marc-André has lent his talents to television shows, movies, and video games, as well as writing and editing books for Alias. Marc-André's television credits include work on *Xcalibur*, and his movie credits include special effects for the remake of *Dawn of the Dead*, as well as technical character direction for *Scooby Doo 2* (for Meteor Studios). He has also developed a lip-sync tool called *FatLips2* for Yulsoft.

Marc-André runs his own company, Realities, in Montreal, Canada.

Creating the EleMENTAL Woodie

The hotel chain isn't stopping with the Tiki terminals and bar. The marketing executives were so revved up with the Tiki terminal designs that they're ready to take the project over the top. Not only do they want to create a cool environment within the resorts, they want to create a special vehicle to promote and commemorate the launch of the Tiki bars.

And what better vehicle to launch a Tiki bar than an old-fashioned Woodie? But this isn't your grandfather's Woodie Wagon ... it's a chopped and channeled Honda Element! A Honda Element? We want it to be modern, and we want to make an already funky vehicle even more funky.

I decide that I need to take a Honda Element, cut the top down by six inches or so, slam it, and wrap the body in a fabulous wood veneer. This is much easier to do in Maya to show as a comp to the hotel execs, rather than going to the expense of having the custom shop crew do it from scratch (before the project is approved).

With an idea in mind, I set off to do some rough cuts in Photoshop to a stock Honda Element photo, snapped right from the dealer's lot. I begin by roughly silhouetting the top of the Element and knocking out the background shown in Figure 1.16. Then, I chop the top piece by piece—cutting, pasting, and repositioning each piece. Once the top is chopped and roughly touched up, it's time to flatten the image and move on to lowering the body. I select the entire body, carefully cutting around the wheel wells. Then, I cut, paste, and reposition the body, slamming it to the ground, as shown in Figure 1.17.

The Element's looking pretty cool, with its top chopped and its body lowered. The torch was taken to the roof pillars, and the springs were replaced in record time! Although this is a quick sketch, it's enough to get the dimensional flavor. With the bodywork in rough shape, it's not an appealing comp. Photoshop offers an easy answer to the design problem—a little tweaking with plug-ins and the chopped Element takes on an appearance somewhere between photo-realistic and watercolor marker (as shown in Figure 1.18).

As I'm having so much fun, I get a little carried away and do the chop job and watercolor market treatment to an additional pair of photographs (see Figure 1.19). It's quick and dirty, sure, but it's cool.

The chopped Element rendering is looking pretty sweet. But I forgot to add the wood panels! A jump back to the rough chopped image in Photoshop allows me to experiment with wood veneers before reapplying the plug-ins to achieve the watercolor market effect, once again (as shown in Figure 1.20).



Figure 1.16: A stock Honda Element



Figure 1.17: The Honda Element—rough-chopped in Photoshop

Figure 1.18: The Honda Element—photo-realistic marker effects in Photoshop



Figure 1.19: A bit less realism, a bit more watercolor

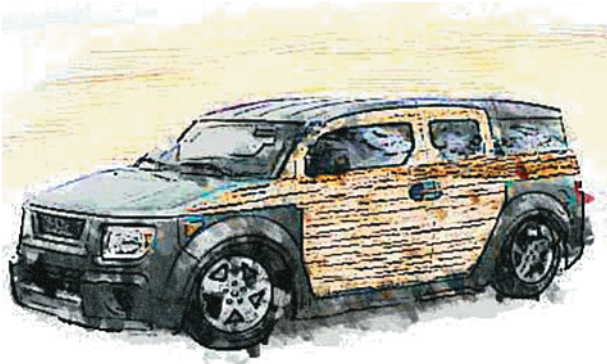
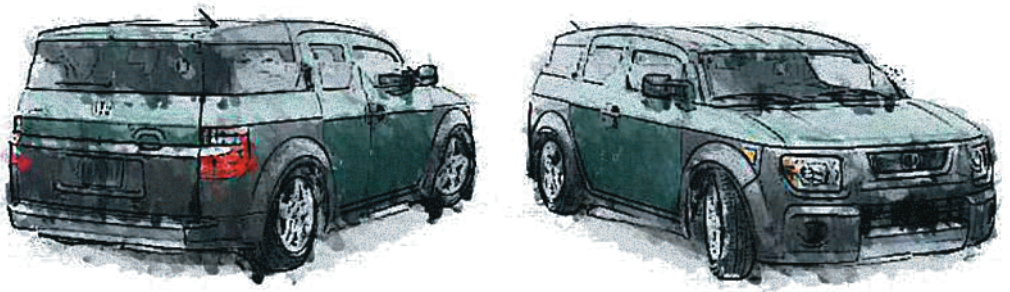


Figure 1.20: The Honda Element—first attempt at woody-ization

Once again, the design is a big hit in the office. After a busy morning, the crew sends a JPEG image to the hotel marketing folks, before heading off for another boisterous lunch filled with frivolity and frozen concoctions. Upon their return, the crew is overjoyed to hear that the marketing department loves the Element Woodie illustration. But there's a wrinkle. The client has asked to see the marvelous vehicle from different angles and in a number of different color schemes.

Here's where the Photoshop-only approach comes to a grinding halt. Multiple angles means that the cut-and-paste Photoshop work will have to be completed for each angle—and new photographs will have to be shot for each of these angles as well. Even worse, while the marketing department loves the watercolor marker renderings, they're asking for a more photographic treatment for the final presentation to senior management. Our clients don't quite have the imagination necessary to envision the finished vehicle. They want to see *exactly* what an Element Woodie might look like, not something that looks like a drawing but an actual photographic rendering.

It's time to call in the heavy artillery.

When you're working with clients, time is often a limiting factor. So, rather than re-take photos from all the different angles, the only way to do this project the right way is to create a chopped Honda Element Woodie in Maya. With some frantic Web searching and a handful of phone calls, I find Meshwerks, the only company in the entire world with an existing Honda Element model in Maya format. And even better, Meshwerks is willing to take on the digital customization work.

After a week's worth of work, Meshwerks produces an absolutely stunning photo-realistic rendering of the vehicle, which has been dubbed the EleMENTAL Woodie. The first image, as shown in Figure 1.21, is breathtakingly real. When the image is sent over to the hotel marketing staff, they're ecstatic.

You'll learn how Meshwerks created the stunning EleMENTAL Woodie in Chapter 10.



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HONDA ELEMENT

Figure 1.21: The EleMENTAL Woodie—final rendering

The Truth in Three Dimensions

As designers, we're often faced with dilemmas. Many of these problems have roots in our current capabilities and limitations. Although the examples presented here may seem a little far out, they're not all that far out of line. How many times has a client come to you with unreasonable expectations? How many times have you had to compromise your designs because of the impossible?

Although the previous examples sprang completely from my imagination, the solutions to the problems were found by hooking up with the right people. I did not have the 3D chops to complete these projects on my own, but I was wise enough to seek the assistance of highly skilled Maya artists that could turn my crazy dreams into reality. You'll meet Marc-André Guindon, the Maya artist who created the Tiki terminal model, in Chapter 8. And Meshwerks is covered in depth in Chapter 10, where you'll learn exactly how they took my marker drawings as inspiration for creating the photo-realistic EleMENTAL Woodie.

The Learning Curve

I would be remiss if I did not state the significance of the Maya learning curve. For many artists, the leap to 3D can be one of the biggest learning challenges of their careers—that is, after the mastery of the basic concepts of the arts. True mastery of Maya does not come in days, or weeks, or even months. It is not something that can be successfully approached on a casual basis. It takes a big commitment of time and, at times, a considerable test of will. But the positive results are inescapable: when you are capable with Maya, anything is possible.

Getting your head around Maya can be a challenge. I know that for a fact, as I've struggled with learning the program on my own, without the benefit of a classroom setting. However, as the popularity of 3D continues to grow, the learning resources do as well, and there are many online communities and Listservs of passionate Maya users who are always willing to lend a hand. Browsing through a local bookstore also turns up a wealth of books to help you learn Maya.

To fully enable the learning process, you must discard the constraints of working in two dimensions while retaining the knowledge you have of working with bitmap images and vector artwork. You'll still need to know how to push pixels and tweak Bézier curves, but you'll need to learn how that applies to the third dimension.

Working in 3D isn't like working on a flat piece of paper. Rather, it's like working on a stage. Think of yourself as being in the business of designing theater sets, and you'll set the stage for success.

My breakthrough came while I was in the midst of envisioning the Tiki terminals. After creating pencil drawing after pencil drawing, I realized that I needed to create some clay models to fully work through the concept. That's when I bought the box of clay. I came home and immediately started whipping up Tiki designs, mostly horrid at first, but soon had my ideas gelling.

And this is what got me over the hump. Thinking in three dimensions isn't about having a computer for a brain. It's about looking at shape and form and the way that light bounces off surfaces. It's about creating something from nothing.

You can't expect to do well in 3D computer graphics if you do not grasp the basics of 3D design and modeling in the real world. I'm lucky in that I've always enjoyed working with clay, and yet it had been years since the last time I experimented in the medium (in a college 3D design class).

Other Options

If the demands of your craft leave little time for exploring Maya, you still have plenty of options. If ideas in your head need to be developed in 3D—but you lack the wherewithal to make it happen on your own—you can easily partner with a 3D artist. You'll see this in a number of cases in this book. A division of labor in a weighty design project that encompasses both 2D and 3D elements is a wise choice.

Two of the artists profiled in these pages—Michael Elins and Mirko Ilic—work in this manner. Both Michael and Mirko are producing high-end artwork that involves three-dimensional elements and are working in Photoshop, yet neither touches the controls in Maya. Instead, they team up with highly skilled Maya artists to produce artwork that smashes the barriers of conventional design.

Looking Forward

Once you understand the basics, it's not hard to build a case for the inclusion of 3D elements in your design work because 3D opens new worlds in so many ways. To fully grasp 3D, however, you must first open your mind to the possibilities. And you must acknowledge that while the rewards are many, there is a learning curve. Rest assured, there is no book that promises to teach you Maya in 24 hours (nor should there ever be). You can't learn Maya in a day, a weekend, or even a week. What's great is that you can get rolling and produce some cool stuff with some basics and some help from others. Because of the incredible depth of creative possibilities, you'll have to decide for yourself what level of Maya you might want to master. But that is beyond the scope of this book.

The intent of the next two chapters is to get you familiar with the Maya interface as you gain the basics of working in 3D. Although the next two chapters are a little more hands-on if you choose, the rest of the book serves an inspirational purpose, examining the studios and artists that are changing the way art gets made. By meeting the artists and learning how they create their artwork, you'll gain insight into the creative process and be inspired to craft your own masterpieces with Maya and Photoshop.