

FOUNDATIONS

*of* DIGITAL ART

AND DESIGN *with*  
ADOBE CREATIVE CLOUD

SECOND EDITION

XTINE BURROUGH

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*of*

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**FOUNDATIONS OF DIGITAL ART AND DESIGN WITH ADOBE® CREATIVE CLOUD, 2nd Edition**  
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ScoutAutomatedPrintCode

*For Parker and Martin, and art and design students*



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This book includes a lot of images of art works that could have resulted in a great amount of permissions expenses. Nearly all of the images in the text were donated. Dear artist and designer contributors, I am forever grateful for your willingness to have your works included here. Thank you, thank you.

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# INTRODUCTION

## WHAT ARE THE FOUNDATIONS OF DIGITAL ART AND DESIGN?

In the School of Arts, Technology, and Emerging Communication (ATEC) at UT Dallas, where I am teaching now, students encounter this book during their first year of coursework. However, knowing the origin story of this book is useful for understanding how I came to think about foundations materials for digital art and design students who might be completing coursework in various types of schools or programs, such as art, communication, design, digital humanities, media studies, and so on.

I originally designed this book before arriving at UT Dallas, when most of my students had little time in their schedules for classes that would heighten their understanding of visual communication: foundations of two-dimensional design, typography, drawing, and so on. Instead, they enrolled in a large historical survey course and some took an elective “skills” course, in which they learned some Adobe applications. Mastery doesn’t happen in a mere sixteen weeks. At best, the skills course created awareness of the concepts and techniques that someone entering the creative professional industries should master.

First developed to serve these students, this book is now used by readers and educators in two-year and four-year fine arts and applied arts programs, college-level communications and media departments, and in some U.S. high schools. Knowing the breadth of my audience, the aim of this book is to offer the most information at the confluence of design (principles, histories, and theories), Adobe software, and examples of digital art for readers, educators, and practitioners with varied interests. My goal is to be thorough enough for university students and clear enough for high school students.

The majority of my students are interested in practicing the exercises and mastering the software, because they’re anxious to jump in and create. Educators are interested in teaching art and design, because they’re passionate not about software, but about media art, graphic design, animation, games, digital video, emerging forms of digital expression, and so on.

My approach to mediating this clash of interests is to write about and show as many ideas and examples of art and design history and principles as I can while demonstrating the use of the tools. For example, instead of showing students how to remove red-eye from a photograph (there are loads of videos on YouTube for such a specific endeavor), I demonstrate making a conscious

design choice in regard to scale, proximity, the rule of thirds, or other principles while using Adobe's tools. I've tried to keep the exercises short, while also showing the fundamental tools in many of the Adobe programs. Most of the tools have changed very little since the first time I used Photoshop in 1992 (with the major exception of the development of layers in 1994, but I digress).

In ATEC, students attend a lecture, traditional studio, and computer lab. So this course (and this book) merges a traditional course in two-dimensional design with foundations of digital art and design practices. I start in Section 1, *Bits, Pixels, Vectors, and Design*, with material that's been presented by the authors and artists on whose shoulders I'm crouching: Donis A. Dondis (*A Primer of Visual Literacy*), Johannes Itten (*Design and Form: The Basic Course at the Bauhaus and Later*), David A. Lauer and Stephen Pentak (*Design Basics*), Wucius Wong (*Principles of Form and Design*), and others. It is this understanding of the language of design that I consider foundational. I also include examples of each principle or basic element drawn from contemporary works of digital art. Although this book may be assigned in a graphic design program, it's often read within the broader context of digital art. I have had many roles as an educator, from an education advisor on the AIGA Orange County board to a co-author of a trilogy of collections on remix studies—my personal identity as a digital artist is also part of this equation.

Two-dimensional design is followed by Section 2, *Digital Photography*. In the classroom, I find it easier to present basic vector graphics before introducing the pixel-loaded arena of digital imaging—Adobe Illustrator is often a much more forgiving application than Adobe Photoshop due to the insignificance of file resolution at such a basic level. In this text, photography is primarily considered to be another vehicle through which the basic elements of design can be understood. In our program, students use this portion of the text to learn to organize files, compose in a photographic frame, and understand color relationships.

Because photo manipulation is nearly as old as the medium itself, the natural follow-up to photography is Section 3, *Digital Manipulation and ~~Free~~ Fair Use*—where better to talk about contrast through juxtaposition? Collage and photomontage are historical legacies of the digital operations: cut, copy, and paste. While discussing these, I also bring forth contemporary strategies for sampling and licensing with copy-left or Creative Commons licenses in this section.

Section 4, *Typography*, teaches students to honor and manipulate type. This is essential, as most visual communication comprises type and image, and occasionally time. I studied photography in my undergraduate days at the Art

Institute of Boston; typography is an art that I learned during my professional life as a web designer in the 1990s and since then as a professor. It helped that I lived with one of the best typographic educators in Southern California in the early 2000s. I've talked with many educators who are strong in one area—photography, typography, web design, or something else—but feel a deficit in another. As such, I provide resources for additional materials throughout the book, both for students and educators who might be using this text in a classroom.

The *Coda*, at the end of the book, explains the important concept of revision. A student may assume that she has an experiential understanding of design principles after simply following the steps in a software application. Students and readers must remember, however, that reading a book on learning to play the guitar or manipulate imagery, is not the same as mastering the instrument or software. Practice, and of course revision, is the best way to learn the craft and become more efficient. I've included revision stories from artists and design professionals alike.

In addition, you'll find one bonus section online or in the electronic version of this book:

Automation is key to working efficiently, so one chapter in Section 5, *Effective Work Habits*, (available online or in the eBook) is dedicated to it. The other chapter addresses the question, “How do you suggest I make a portfolio I can send someone?” There's no one perfect answer, as each student has different talents and different needs. But learning pagination in Adobe InDesign can help students who want to create their own books—a handy skill for soon-to-be graduates or those applying for internships.

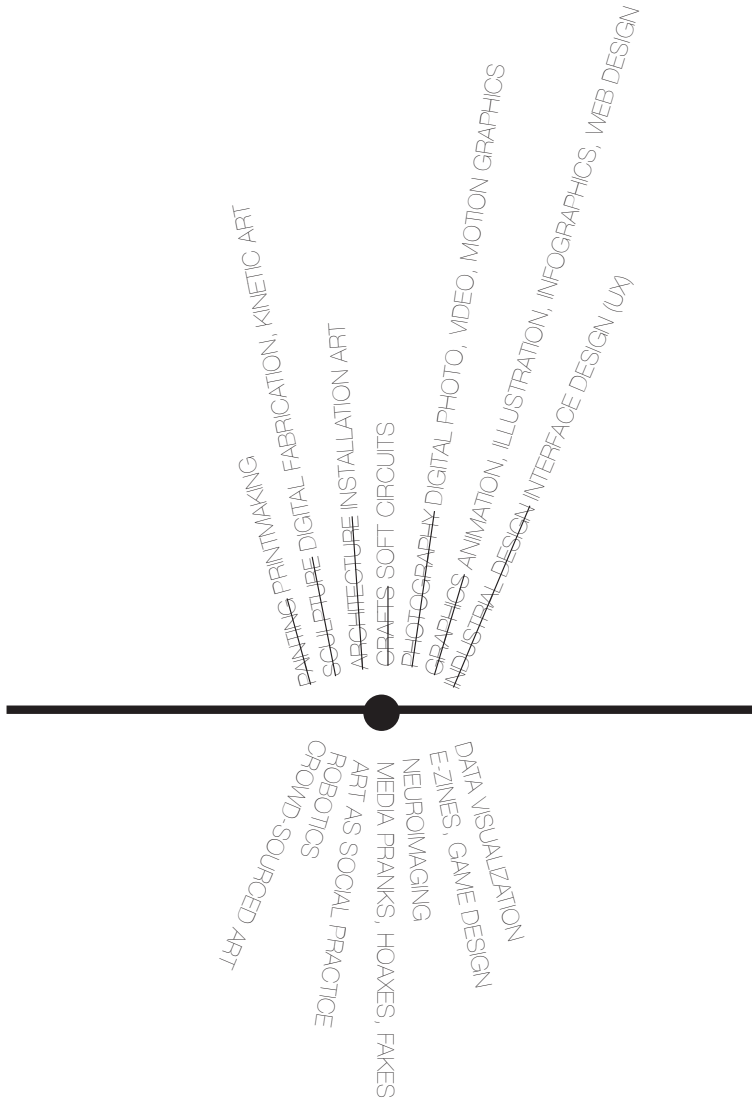
Lastly, I would like to offer an update of Dondis's scale that registers the differences (or similarities) among specific artistic media on a continuum of “fine” and “applied” art in FIGURE I.1. To demonstrate that the Bauhaus “would group any and all of the fine and applied arts on one central point in the continuum” [1], Dondis placed the media of the time grouped around a central point on the horizontal axis (FIGURE I.1).

All forms of visual message-making are influenced and analyzed by an understanding of the basic elements of design, on the screen, in print, as a hologram, or however else they may come to us on future platforms. Whether you intend to be a web designer, a social media entrepreneur, a digital installation artist, or a game developer, the design foundations offered in this book, coupled with the exercises in each of the software applications, will help you achieve your goals.

**REFERENCE [1]** Donis A. Dondis, *Primer of Visual Literacy* (Cambridge, MA: MIT Press, 1973). 4.



**FIGURE I.1** Donis A. Dondis developed the original illustration in reference to the perceived intellectual divide between the two purposes, outcomes, or beliefs about art making. (The image is essentially the same, where the labels would have been the text appears here with a strike through it.)



Because all students or readers will have different hardware, software, and needs, you'll learn to use this book in the most fitting way for your setup in the following exercises.

EXERCISE  
1

## OPERATING SYSTEMS

When the Mac was released in 1984, it included a graphical user interface and a mouse, two visual user-oriented components that were missing from other personal computers (FIGURE 1.2). Artists and designers developed a strong loyalty to Apple over time as their needs and concerns were often met first on the Apple platform. For a while, there was no question about which platform was best suited to making art on the computer: Mac. Universities now have Mac and Windows labs dedicated to art and design programs. In some creative industries, such as graphic design or digital photography, Mac (now rebranded macOS) is still the standard platform. However, web designers, game developers, and animators often work on the Windows platform.

It does not matter if you use a macOS or Windows. Your files will transfer easily from one operating system to the other. (Be sure to include the file extensions in the name of your file—something you'll learn more about in Chapter 1, *The Dot, the Path, and the Pixel*). If you're creating multimedia art or designs, you'll want to view the work on both platforms. However, this should not dictate where you conceive and develop the project.

I've written this book using macOS. The screenshots were made on my MacBook Pro. However, every keyboard shortcut is provided in both macOS and Windows versions. For instance, the File > Copy command shortcut is listed throughout the book as **Command-C/Ctrl-C**.

That's it. The rest is more or less the same.

EXERCISE  
2

## DOWNLOADING WORK FILES, BONUS CHAPTERS, AND VIEWING SCREENCASTS

Some of the exercises in this book will require you to download a work file or a set of files before you begin. Readers who buy the print edition of the book will also want to download the bonus section on *Effective Work Habits*. All of the files are on the companion websites for the book at [www.digitalart-design.com](http://www.digitalart-design.com) (FIGURE 1.3) and at [peachpit.com](http://peachpit.com) for registered users (see "Accessing the online content at [peachpit.com](http://peachpit.com)" later in this chapter). I've also posted a link to the work files on my personal website ([www.missconceptions.net](http://www.missconceptions.net)), and there's a Facebook page for *Foundations of Digital Art and Design* where I post updates and answer reader questions [2].

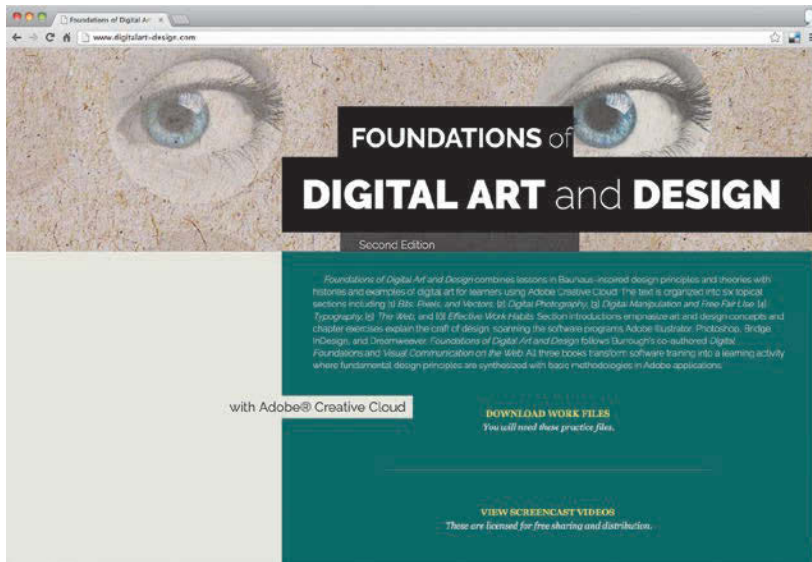


FIGURE 1.2 The first Mac computer sold commercially in 1984. It included a mouse and a graphical user interface instead of the ever-intimidating command line.

REFERENCE [2]

[facebook.com/  
FoundationsOfDigital  
ArtAndDesign](https://facebook.com/FoundationsOfDigitalArtAndDesign)

FIGURE I.3 A screenshot of the companion website, [www.digitalart-design.com](http://www.digitalart-design.com). You can download any necessary work files from this site before beginning to work on the exercises in the chapters.



**REFERENCE [3]**

[bit.ly/video-demos](http://bit.ly/video-demos) or  
[bit.ly/foundations-demos](http://bit.ly/foundations-demos)

**REFERENCE [4]**

[bit.ly/youtube-demos](http://bit.ly/youtube-demos)

Most chapters include a screencast in which I have demonstrated my process for some part of the chapter's exercises. These offer me an opportunity to show a portion of the exercise that is better demonstrated in a live presentation than captured in images and text. They are also an archive of tutorial files that my students and I rely on for use outside of the classroom. These are accessible from the companion website. The screencasts for this second edition of the book are published on Vimeo [3]. The screencasts for the first edition of the book are preserved on YouTube [4].

## ACCESSING THE ONLINE CONTENT AT PEACHPIT.COM

1. Go to [www.peachpit.com/register](http://www.peachpit.com/register).
2. Sign in or create a new account.
3. Enter the ISBN: **9780135732359**, and click Submit.

The lesson files can be accessed through the Registered Products tab on your Account page. Click the Access Bonus Content link below the title of your product to proceed to the download page. Click the lesson file links to download them to your computer.

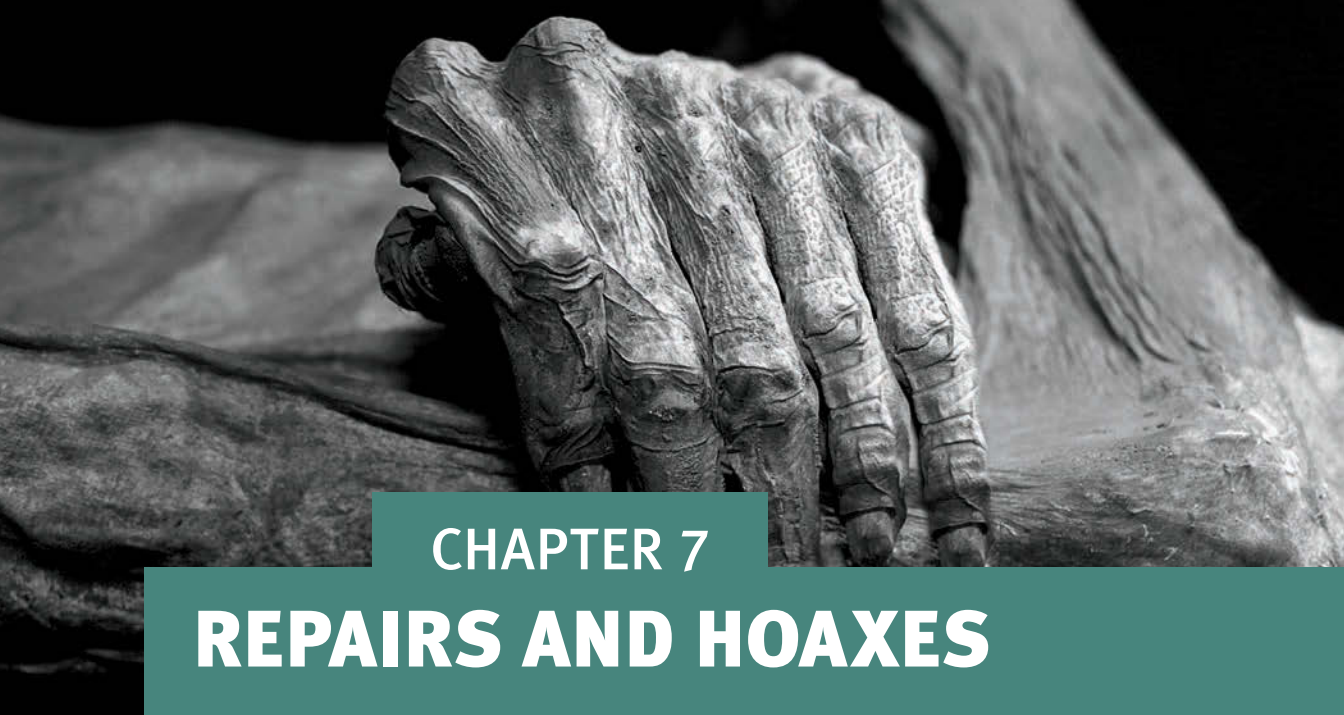




## THIRD-PARTY IMAGES

Many of the images in this book were donated by artists and designers. Some were available for me to use in a commercial publication because the copyright had expired or because the work was part of a government archive, which usually puts it into the public domain. To those who donated: *Thank you!*

You'll learn more about public domain, the copyleft movement and creative licensing techniques in the introduction to Section 3, *Digital Manipulation and ~~Free~~ Fair Use*.



## CHAPTER 7

# REPAIRS AND HOAXES

**THE EXERCISES IN** this chapter will provide technical lessons using Adobe Photoshop and Adobe Lightroom Classic and teach you to match textures and values to create photographic illusions in two compositions. You'll explore various tools for *healing* and *cloning* parts of an image, as well as add a simple layer mask to blend image features for a quality of verisimilitude.

# DIGITAL REPAIRS

**LINK** For more information on the repair tools in Photoshop, see the Adobe Photoshop help page: [helpx.adobe.com/photoshop/using/retouching-repairing-images.html](https://helpx.adobe.com/photoshop/using/retouching-repairing-images.html).

The repair tools are stacked in a series in the Photoshop Tools panel, starting with the Spot Healing Brush tool beneath the Eye Dropper tool. The tools I use most often to make repairs are the Spot Healing Brush tool and the Clone Stamp tool. The Patch tool can be hard to control or predict, and the Red Eye tool does what you think it does. (It's certainly useful.)

The Spot Healing Brush tool functions as a fix-it paintbrush. You simply click any part of the image, and the brush attempts to *repair* (or correct uneven tones in) the area based on a sample of nearby pixels. Of course, it's never a good idea to modify your original image. So when using these tools, I recommend copying the background layer to preserve the original file. You'll learn more about *non-destructive* editing in Chapter 8, *Select, Copy, Paste, Collage*.

**HEALING BRUSH** This tool is essentially a combination of the Spot Healing Brush tool and the Clone Stamp tool: It lets you sample a source and tries to even out adjacent tones and blemishes based on nearby pixel information.

The Clone Stamp tool is also a brush. Cloning is a two-step operation: Photoshop needs to understand what you're cloning and where the clone should be applied. So you'll need to sample an original source (the *what* part of the question) and then brush the sample into a new location (the *where* part). The sampling part of the Clone Stamp operation can sometimes be tricky to learn, but once you master the tool you'll be able to repair just about anything.

Before Photoshop, artists manipulated images during the photo shoot, in the darkroom, or on the print, for instance, with SpotTone, a specialty ink used to correct or fill in white areas of photographs for dust spots. This seems like a lost art now that basic photo repairs can be made so quickly using software. However, manipulating photographic imagery has ethical implications for photojournalists and media contributors in the digital age. For instance, the National Press Photographers Association (NPPA) Code of Ethics includes the following statement:

**REFERENCE [1]**  
See [nppa.org/code-ethics](https://nppa.org/code-ethics).

"Editing should maintain the integrity of the photographic images' content and context. Do not manipulate images or add or alter sound in any way that can mislead viewers or misrepresent subjects" [1].

You can see both images of O. J. Simpson on the cover of the two magazines side by side in the entry "O. J. Simpson murder case" on Wikipedia.

Instances of photo manipulation to "get a better shot" have led to firings (for instance, Bryan Patrick from the *Sacramento Bee*) and loss of credibility (the infamous *National Geographic* cover of the Egyptian pyramids in 1982 where a horizontal image was smooshed into a vertical cover space). They've also led to increased criticism within the field. Take a look at two shots of O. J. Simpson published in June 1994 by *Newsweek* and *Time* magazines: the *Time* photograph was manipulated to make Simpson's skin appear darker than it actually is.

## WHAT IS ETHICAL IN REGARDS TO DIGITAL MANIPULATION?

In the “Changes to Photographs” section of the *NPPA Special Report: Ethics in the Age of Digital Photography*, Rev. Don Doll, S.J. is credited for the following ideas: “There are technical changes that deal only with the aspects of photography that make the photo more readable, such as a little dodging and burning, global color correction, and contrast control. These are all part of the grammar of photography, just as there is a grammar associated with words (sentence structure, capital letters, paragraphs) that make it possible to read a story, so there is a grammar of photography that allows us to read a photograph. These changes (like their darkroom counterparts) are neither ethical nor unethical—they are merely technical.” (See [www.nppa.org/node/5127](http://www.nppa.org/node/5127) for more information.)

## CREATING A HOAX

Although visual reporters need to handle digital manipulations with caution and care, artists often use these tools to create commentary on popular media and historic subject matter. For instance, Josh Azzarella’s still and video works use manipulation to revise historic events by way of deletion. In his still image, *Untitled #15 (Tank Man)*, Azzarella re-creates the scene from Tiananmen Square, originally photographed by Associated Press photographer Jeff Widener. In Widener’s image, the man is face-to-face with several Type 59 tanks during the Tiananmen Square protests of 1989. However, in Azzarella’s image, the tanks are removed, and the man is left isolated in the middle of the street, seemingly out of the way of danger (FIGURE 7.1). Similarly, *Untitled #7 (16mm)* is an 11-second loop showing President John F. Kennedy driving near the grassy knoll but never experiencing the fatal bullet wound. The footage of JFK riding in the car is haunting for contemporary viewers who know where the drive leads, even though it never quite gets there [2]. These examples of revision and manipulation aren’t meant to hoax or deceive the viewer (after all, we know what the artist is up to), but the strategies for image manipulation are the same as those used to create a photographic hoax, which you’ll do in Exercises 4 and 5.

**REFERENCE [2]** See Josh Azzarella’s videos on his website: [www.joshazzarella.com](http://www.joshazzarella.com).



**FIGURE 7.1** Josh Azzarella, *Untitled #15 (Tank Man)*. This image is a single frame in Azzarella’s video. Image appears courtesy of the artist.



FIGURE 7.2 A portrait of President John F. Kennedy before and after digital repairs.

## WHAT YOU’LL NEED

Download the following source materials to complete the exercises in this chapter:

- ✓ The `chapter07-workfiles.zip` file which includes `repair-start.psd` and `hoax-start.psd` in the `chapter07-start` folder.
- ✓ Alternatively, you can download the two photographs you’ll need for this chapter from their source repositories online (see the sidebar *Downloads*). Save them in a folder named `chapter07`.

You’ll benefit from the ability to see changes in values and textures across all areas of the image.

## WHAT YOU’LL MAKE

In the exercises in this chapter, you’ll repair a dusty portrait of JFK (FIGURE 7.2) and create an “extra finger” mummy hoax (FIGURE 7.3). The repairs and hoax share the aesthetic quality of verisimilitude—they deceive the viewer into believing your manipulated version of reality.



FIGURE 7.3 A mummy hoax includes an extra finger.

Image credits for the source photographs President John F. Kennedy, head-and-shoulders portrait, facing front (1961) appears and is used in this chapter courtesy of the Library of Congress [LC-USZ62-117124]. Hand of Guanajuato Mummy appears and is used in this chapter courtesy of Tomás Castelazo.



## PUBLIC DOMAIN AND CREATIVE COMMONS LICENSED IMAGES

To begin the exercises in this chapter, you'll use two images that are, for different reasons, free to you. The portrait of JFK has two listings that let me judge that the image is in the public domain:

- Rights Advisory: No known restrictions on publication.
- Notes: U.S. Navy photo.

Because there are no known restrictions and this was a U.S. Navy photo (and government media is typically in the public domain), I have assessed that the image is fair to use. Also notice that the Library of Congress includes the following in red letters: "Rights assessment is your responsibility."

The mummy image is licensed under the Creative Commons Attribution-Share Alike 2.5 Generic license. Because the image has a Share-Alike component (and this book is not licensed with a CC-BY-SA license, as it would be written in shorthand), I contacted the author for permission to use the image.

## DOWNLOADS: HIGH-RESOLUTION IMAGES FROM THE LIBRARY OF CONGRESS WEBSITE AND WIKIMEDIA COMMONS

1. The photograph of President John F. Kennedy is available on the Library of Congress website—search for image LC-DIG-ppmsca-38698 on [loc.gov](http://loc.gov). Beneath the thumbnail of the image on the left side of the page, you'll see a link to download the 32.1 MB TIFF file of the image. This is the largest image available, and it's the one you should download, because you can always scale down but you can't add pixels. 32 MB is a large black-and-white file! It's approximately 17 by 21 inches at 300 DPI. I downloaded this image and then scaled it down to 9 inches vertically at 300 DPI for the **repair-start.psd** file that I've included in the files on the companion site. If you want your brush sizes to match mine during the exercises, do the same or use the files on the companion site.
2. The file **Placid death.jpg** is available from Wikimedia Commons. The highest resolution file can be downloaded by clicking the "Original file" link that appears beneath the image on the file page. If you click the image itself to open it in a separate window, you'll view the largest image. Then you can right-click the image (Control-click on older Macs) to open a contextual menu from which you choose Save Image As to download the image. Download the original file and save it as **hoax-start.jpg**.



## REMOVE DUST AND HEAL JFK'S BLEMISHES WITH THE DEVELOP PANEL IN ADOBE LIGHTROOM CLASSIC

There are multiple ways to repair skin tones with digital tools. In this exercise, you will use the Spot Removal tool in Lightroom Classic. In Exercise 2, you will use similar tools in Photoshop.

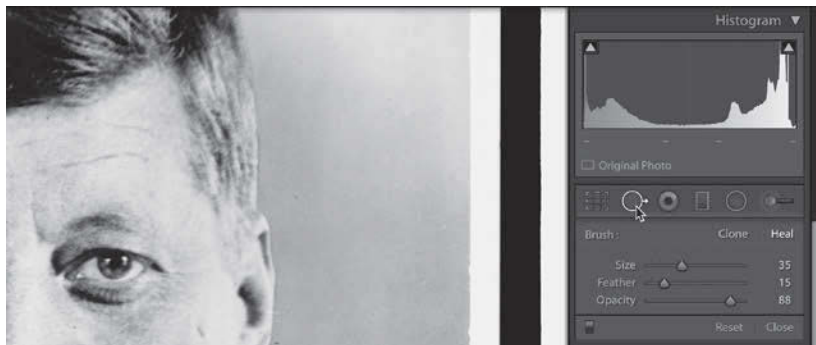
See Chapter 6 Exercise 5 to learn about importing images to Lightroom Classic.

1. Launch Adobe Lightroom Classic, and import the **repair-start.psd** file to your Lightroom library. Make sure the Add option is active before you click the Import button.
2. Double-click the image preview, and change the module from Library to Develop by clicking the Develop button in the Module Picker at the top of the screen (FIGURE 7.4).
3. The tonal range and contrast in this photograph do not appear to need significant adjustments, however digital artists often touch-up portraits to soften wrinkles, even skin tones, and remove blemishes. Zoom in on JFK's face either with the mouse wheel (or touchpad) or by pressing the **Command-+ / Ctrl-+** keys. Inspect the surface of the skin, looking for places where wrinkles appear to be especially deep as a result of shadow/high-light contrast. Also look for spots or blemishes. Load the Spot Removal tool from the set of buttons beneath the Histogram (FIGURE 7.5).

FIGURE 7.4 Open the **repair-start.psd** file in the Adobe Lightroom Classic Develop module.



FIGURE 7.5 Load the Spot Removal tool in Lightroom Classic.



4. Notice the Brush options that appear beneath the Spot Removal tool when this tool is loaded. This tool operates like a brush: It has controls for its size, feather (that is, edge sharpness), and opacity. You can work with this tool in Clone or Heal mode. If you are cloning, you need to sample a source to clone from before you begin brushing with the tool. If you are healing, simply click with the brush and Lightroom Classic will work its magic by automatically selecting a source based on a similar area of the image according to its tone and texture. Be sure that Heal mode is selected as you will work with the brush in this mode in the next steps (FIGURE 7.6).
5. Practice zooming in and out and moving the image around in the application window. I use hot keys for all of this, as when I use my trackpad or mouse wheel (or a touchpad), I often end up resizing the brush by accident. I use **Command++** and **Command--** to zoom (**Ctrl++** and **Ctrl--** for Windows users), and I press the **Spacebar** to engage the Hand tool, which I use to move the surface of the image around. When I am repairing or modifying the image data, like you are about to do in this step, I like to see that information in detail, which means that less of the image appears on screen at once. You will quickly develop kinetic memory in your hands to change the zoom level and location of the image on the screen without having to look down. While the image of JFK's face fills the screen from his forehead to his lips, look for a dark spot on his cheekbone (his left, your right side). Move the Spot Removal tool so the brush hovers over this area. Is the brush too small, too large, or just the right size for repairing this dark spot? The circular brush tip should be just a little larger than the spot. Mine happened to be exactly the same size as the spot, so I increased my brush by about 15 pixels. I did not use the Size slider in the Brush panel, instead I used the key commands. Press the **Left Bracket ([)** key to decrease the size of the brush and the **Right Bracket (])** key to increase its size. When the brush size is set correctly, click the dark spot (FIGURE 7.7).



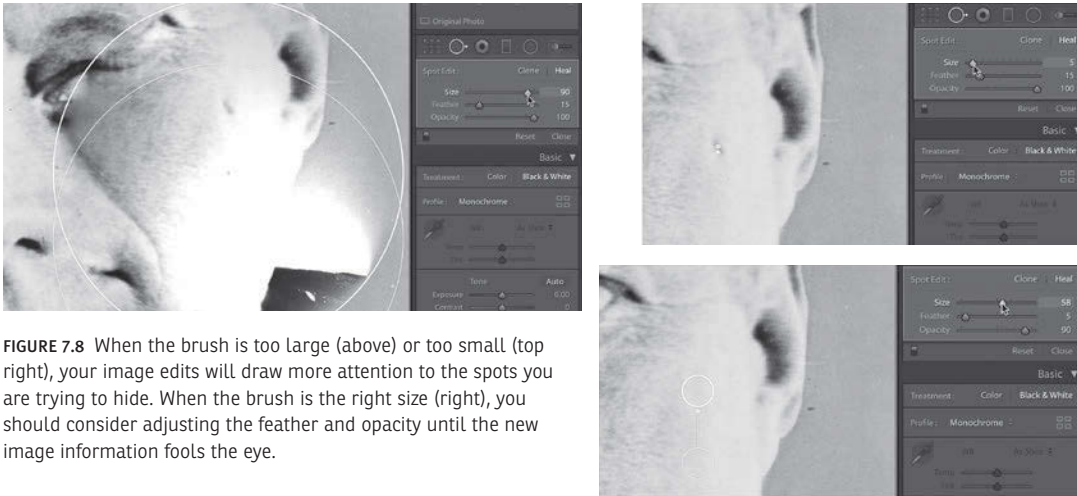
FIGURE 7.6 Set the Spot Removal brush to Heal.

**HAND TOOL** Use the Hand tool to move the image around the screen while you're zoomed in. You're not moving any part of the image file; you're simply changing your view when you use the Hand tool. Access this tool by pressing the spacebar. This tool is useful in many Adobe applications, including Lightroom Classic, Photoshop, and Illustrator.

**ZOOM TOOL** You can easily access the Zoom tool while working with most other Adobe Creative Cloud applications by pressing the **Command/Ctrl** keys with the **Equal** or **Minus** key. (I always think of zooming in as **Command++** even though the Shift key is not involved).



FIGURE 7.7 Click the Spot Removal tool on a dark spot or blemish to replace it with similar tones selected from another part of the image. Use a brush size that covers the spot.



**FIGURE 7.8** When the brush is too large (above) or too small (top right), your image edits will draw more attention to the spots you are trying to hide. When the brush is the right size (right), you should consider adjusting the feather and opacity until the new image information fools the eye.

6. Did the spot disappear? Are you happy with the tonal adjustments Lightroom Classic, selected for you? You can still edit this spot because Lightroom edits are *non-destructive*. All of the information in the original image is preserved, and modifications made in the Develop panel are saved separately. In addition to your repair, you should see two circles connected by a thin arrow on top of the image. One circle shows the location Lightroom chose to sample repair information for the dark spot. The arrow grows from this circle to another one. At the end of the arrowhead is the second circle, where you made the repair. Notice how the Spot Removal tool's appearance changes depending on where you place the pointer on the image. When you hover the tool over either of the circles, it changes to a hand pointer. In all other parts of the image, the circular brush remains active for the tool, so you can repair or remove additional spots. Click the circle over the dark spot you just removed. Modify the brush settings; they are still active, even after you used them. Change the Size, Feather, and Opacity settings by dragging the sliders all the way to the left and right extremes, just to see how these adjustments control the results of your repair, and then use your best judgment to set them properly. I ended up leaving my settings as seen in the third part of **FIGURE 7.8**.
7. You can also move the circle that accounts for the sampled part of the image to see different results from the Spot Removal tool. Use the Spot Removal tool, again with the brush set to Heal to drag a line over the darker wrinkle across the middle of JFK's forehead (**FIGURE 7.9**). You'll modify the results in the next step.



**FIGURE 7.9** The Spot Removal tool can be drawn in a line over large areas for repair. Be extra attentive to the Opacity and Feather settings in these cases.



**FIGURE 7.10** The location of the sample source can be adjusted once you have made a repair.

8. Wrinkles should not be completely erased. If your Opacity was set to 100 you will have replaced them with smoother skin and you should adjust the opacity downwards. If your brush was too large, you may have sampled the other wrinkles across his forehead, which could have left you in a bit of a mess. Now you should modify the brush options while the area you just painted across is active. (If you deselected it, click the circle attached to the area where you made an adjustment.) I changed the Opacity value to 40, then I moved the sample source to a lower part of the forehead by dragging the circle at the blunt end of the arrow (FIGURE 7.10).

**FEATHER** You will find a numeric field or slider to control the Feather value in various parts of such Creative Cloud applications as Lightroom Classic and Photoshop. In all cases, this refers to how sharp an edge should appear. When you are using the Spot Removal in combination with Heal mode or the Healing Brush in Photoshop, you will probably choose a small number for the Feather option because you do not want the brush edges to be visible. When you are cloning, however, you may want to start with no amount of feathering so that you clone pixel information precisely. Then you may return to the clone area with some amount of feather applied to the brush to blend the results.





**FIGURE 7.11** When the Tool Overlay option is set to Always, it is easy to see all of the locations where repairs have been made.



**FIGURE 7.12** Changing the Tool Overlay option to Never allows you to see results of the repairs you made without being distracted by the interface.

**FIGURE 7.13** Finish your repairs, and click the Done button.



**TOOL OVERLAY** In the Toolbar at the bottom of the image is the Tool Overlay menu. This lets you control the visibility of tools, depending on what you are working on. If you leave it on Always, you will always be able to see the circles created by the Spot Removal tool. This can be helpful for being able to select them and modify them. At other times, you may want to change the menu to Selected or Never, because it can be difficult to see the results of the tool in the context of surrounding pixels when a white trace line interrupts your view.

9. Continue working with the Spot Removal tool set to Heal on the entire image, including the dust in the negative space around JFK's head and the bags beneath his eyes. Choose the Tool Overlay option Always to see all of the locations where you have modified the image (FIGURE 7.11); choose Never to see the results of your work (FIGURE 7.12).
10. When you are finished, click the Done button in the lower-right side of the image window (FIGURE 7.13).
11. Choose File > Export to save a file with all of your adjustments. In the Export One File dialog box, choose Export To: Hard Drive from the first menu. In the Export Location section of the dialog box, choose Same Folder As Original Photo from the Export To: menu, and in the File Naming section, choose Filename-Sequence from the Rename To: menu. You should see a preview of the file name, repair-start-1.jpg (FIGURE 7.14). Click the Export button.

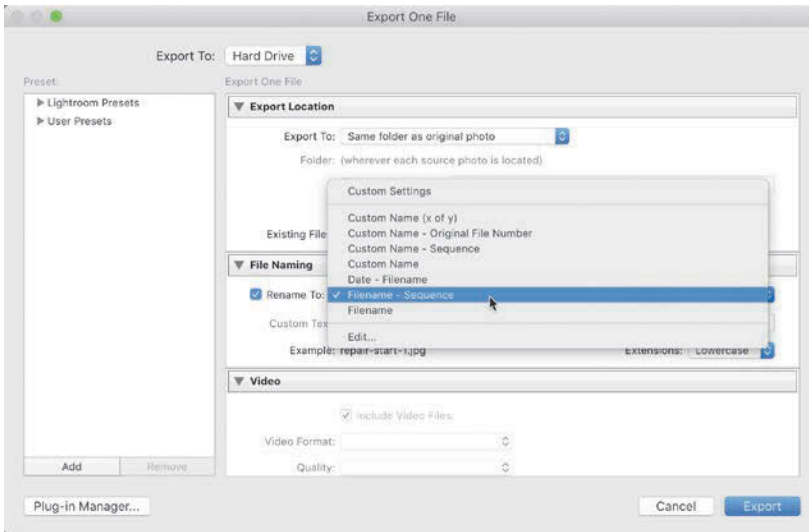


FIGURE 7.14 Export the file containing image repairs to the same folder as the original folder with a sequence number.

12. Quit Lightroom Classic as you will work in Photoshop next.

## EXERCISE 2

## JFK'S EYES: TONAL REPAIRS WITH DODGE AND BURN

Now you'll focus on repairing the eye area. Because you've already done a once-over with the Spot Healing Brush tool for dust, scratches, and major blemish repairs, you'll do this additional, localized work on a new layer in Adobe Photoshop. In this exercise, you'll modify a copy of JFK's eyes with the Dodge and Burn tools. If you've never printed a negative in the darkroom, the analogy between this tool and common darkroom practices might not be intuitive. Dodging reduces the amount of light a print is exposed to during image processing in a darkroom, while burning adds additional exposure time (remember that the more light that hits a patch of photographic paper, the darker it becomes). Sometimes a negative needs a full exposure in all areas except for one (for instance, around JFK's eyes—beneath his eyes he had dark rings and his eyebrows are so light they barely register). Photographers dodge prints during the image processing by blocking exposure light on a certain area (or areas) of the paper (to keep them lighter) or by blocking nearly the entire exposure with the exception of a small area in order to “burn” it in (and darken it). In turn, these small portions of the print receive less or more light in comparison to the rest of the projected imagery. When burning an area of the sensitized paper during an exposure to light in a black-and-white wet lab, for instance, a common exposure time for the adjustment might be about 5 to 10 percent of the total exposure. So, in Photoshop, you might start with the

**WORKSPACE** Choose Window > Workspace > Photography for the remaining exercises in Photoshop.



**FIGURE 7.15** The Lasso tool is grouped with other selection tools.

#### KEYBOARD SHORTCUTS

When copying and pasting from one layer to another, an alternative to **Command-C/Ctrl-C** and **Command-V/Ctrl-V** is to use the single command **Command-J/Ctrl-J** to “float” the selected area to a new layer.

**FIGURE 7.16** Start and end the selection with the Lasso tool at the same location in the image. Press and hold the Shift key to add to an active selection. The “marching ants” show a selection around the eye area.



Exposure value set at 5% or 10% in the Burn tool options. Of course, this value varies from negative to negative (or file to file), so it's common to make a best guess when using this tool in combination with **Command-Z/Ctrl-Z**.

1. In Adobe Photoshop, open **repair-start-1.jpg**, which you just exported from Lightroom Classic. If you skipped this first exercise, open **repair-start-1.jpg** from the **chapter07-start** folder in **chapter07-workfiles.zip** available on the companion website.
2. Select the Lasso tool from the Tools panel (**FIGURE 7.15**). This tool lets you make a free-form selection around any part of the image. It's not a good tool to use when you need to perform a precise selection, but it's perfect for quickly isolating a general area of the image.
3. Draw a loose circle all the way around the left eye area, including a bit above the eyebrows. Be sure to begin and end the selection at the same point so that Photoshop knows the complete area of the selection. You'll see flickering dashed lines surrounding the selected area, often referred to as “marching ants.” Now you'll add a selected area around the right eye to the current selection. Press and hold the Shift key while drawing a circular shape around the right eye area with the Lasso tool—the tiny plus sign near the bottom of the tool shows that you're adding to the current selection. You should have two sets of marching ants on the image, one surrounding each eye (**FIGURE 7.16**).
4. Copy the selected eye area and paste it using the keyboard shortcuts **Command-C/Ctrl-C** then **Command-V/Ctrl-V**. In the Layers panel, rename the new layer **eyes**. Choose File > Save As to save the PSD file to your hard drive. I named mine **repair-end.psd** and put it in my **results** folder.

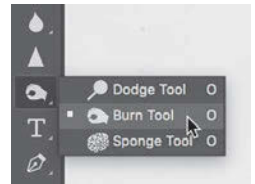
## SCREENCAST 7-1 ADDING AND DELETING WITHIN SELECTIONS

You can add to any selection using one of the Photoshop selection tools by pressing the Shift key. If you want to add extra area to an existing selection, you'll have to begin the "new" part of the selected area from within the existing selection. If you want to subtract part of an existing selection, press and hold the Option/Alt key while starting the "deleted" area of the selection from outside the existing selection. This is much more easily understood by seeing it demonstrated than by reading text. For a demonstration, view the screencast for this chapter.

All screencasts are available on the companion website, [www.digitalart-design.com](http://www.digitalart-design.com) or on the Vimeo playlist, [bit.ly/foundations-demos](http://bit.ly/foundations-demos).

5. The bags beneath his eyes were too dark before you lightened them with the Spot Removal tool in Lightroom Classic. In opposition to this, his eyebrows (especially his left brow) are so light they barely register. Because you already corrected for the skin tones under his eyes in Lightroom, load the Burn tool to darken the brows (FIGURE 7.17).
6. Glance at the Layers panel. Nothing should have changed there; you should be working on the **eyes** layer. (Click it to make it active if you noticed that another layer is active.) Always look at the tool options, especially before using a new tool. There are many options for the Burn tool. For now, notice the Brush Preset picker menu, the Range menu (choose Highlights), and Exposure control (set that to 10%). There are other options, too, including the option to enable airbrush style build-up, the Protect Tones checkbox, and an icon that allows the pressure to determine brush size when using a stylus pen. Open the Brush Preset picker menu, and make sure that the Hardness level is set to zero, as you'll want your brush to have a soft edge to allow the burning results to feather or blend into the image. Place your pointer over the eyebrow and use key commands to adjust its size so it covers the eyebrows where they are largest (**Left Bracket** key or **Right Bracket** key, just like in Lightroom). Now you need to estimate a reasonable exposure value. The general rule is that you can always brush these tools over an area more than once, so it's better to err on the side of a lower value. Play with the exposure value (I ended up using 10%), and make a quick brushstroke over JFK's left eyebrow to darken it (FIGURE 7.18). Zoom out to 100% to evaluate your results. I brushed twice over the left brow and once towards the end of the brow on the right side of the image. The modification should not be extreme. Your modification should be believable!

Keep a copy of the original file in the Layers panel when working on repairs. Naming your layers as you work will keep the panel organized and help you work efficiently as the size of the list increases.



**FIGURE 7.17** The Burn tool is grouped with the Dodge and Sponge tools. These tools alter the tonal values and intensity of the hue in an image.

**POINTER IMAGE** If you don't see a circle representing the size of the brush in Photoshop, check your Photoshop preferences. The brush's appearance is set in Photoshop > Preferences > Cursors/Edit > Preferences > Cursors. Choose Normal Brush Tip. Also, make sure your Caps Lock key is not depressed. Engaging Caps Lock will change the pointer image to a cross-hair.

**FIGURE 7.18** Touch up the brow area with the Burn tool. Adjust your settings so you need to brush over this area of the image only once or twice.

Why not use the Spot Healing Brush tool here? You could work with the Spot Healing Brush tool to correct the eyebrows, but the trouble here is not the pixel information, just the value of the highlight tone. In this situation, correcting the tones by burning and dodging will maintain the integrity of the image.



## COPYING IMAGE PARTS

Be extra attentive to the Layers panel when copying selected parts of an image. It's common for new users to attempt to copy part of the image that they can see, but that isn't actually on the selected layer. If you do this, you might get an error message stating "Could not complete the copy command because the selected area is empty." This happens to everyone at some point during image manipulations. Simply click OK to exit the warning dialog, and then activate the appropriate layer before attempting to copy again.

## HISTORY IS FULL OF REVISIONS

Repairs will inevitably lead you to over-click with tools such as the Healing Brush or the Dodge and Burn tools in the Photoshop file. It's easy to become click-crazy in the process. Familiarize yourself with the History panel, as you'll come to rely on this handy Photoshop archive. There are three things you need to know about using the History panel:

- Access the History panel from Windows > History or the History icon in the column of panels on the right side of the Application window.
- By default, Photoshop may save only 20 or 50 of your previous clicks or steps. You'll want to increase this when doing repair work. Choose Photoshop > Preferences > Performance/Edit > Preferences > Performance. On the right side of the dialog box, enter 99 in the History States field. The more clicks or previous states you save, the more RAM you'll use. If your computer is slow or lacking RAM, you may want to skip this step.
- To go back a step or two, or five, click once on the name of each of the previous steps in the History panel until your file appears in the state at which you want to begin working anew. There's nothing else you need to click. Simply begin working again, and the History panel will create new steps, overwriting the dimmed step or steps that you're leaving out of your process.



7. Review your modifications at actual size by using the keyboard shortcut **Command-1/Ctrl-1**. Click the eyeball icon next to the **eyes** layer in the Layers panel to hide and show the layer (FIGURE 7.19). If you have gone too far, you can reverse your way back through your actions using **Command-Z/Ctrl-Z** or the History panel (see the sidebar). When you are finished adjusting the eye area, save your work and close the file.



**FIGURE 7.19** Making the **eyes** layer alternately invisible (top) and visible (bottom) helps preview repairs. You can easily see your repairs by clicking the Eyeball icon on and off in the Layers panel.

### EXERCISE 3

## IT'S A HOAX! ADDING AN EXTRA MUMMY FINGER

In this exercise, you'll add an extra mummy finger using the Clone Stamp tool. This tool functions similarly to the Spot Repair tool in Lightroom Classic and the Healing Brush tool in Photoshop, but you're responsible for selecting the location of the source area before making repairs. You'll work with a hard-edged and soft-edged brush in this exercise. In the next exercise, you'll clean your work with a layer mask.

1. Open **hoax-start.psd** in Photoshop. Continue to work in the Photography workspace.
2. In the Layers panel, click the Create A New Layer icon. Unless you clicked the icon more than once, the layer's default name is **Layer 1**. Rename it **finger**. You now have an empty layer named **finger** above the locked **Background** layer in the Layers panel.
3. Select the Clone Stamp tool from the Tools panel (FIGURE 7.20). View the Options bar. I set my brush to 250 pixels and changed the Hardness value to 85%. Because you'll be copying pixels with this tool, you'll want to use a brush that isn't too soft. The soft edges often blur the pixel information, which you want to keep sharp, at least during the copying portion of this process. Keep the Mode set to Normal, leave the Opacity and Flow at 100%, check the Aligned box, and set the Sample menu to All Layers (FIGURE 7.21). Remember, you'll first sample with this tool and then clone. If you check the Align box, you're telling Photoshop to keep the sample area aligned with the cloning area. You'll see that it makes sense to keep the source and clone aligned.



FIGURE 7.20 The Clone Stamp tool is grouped with the Pattern Stamp tool in the Tools panel.

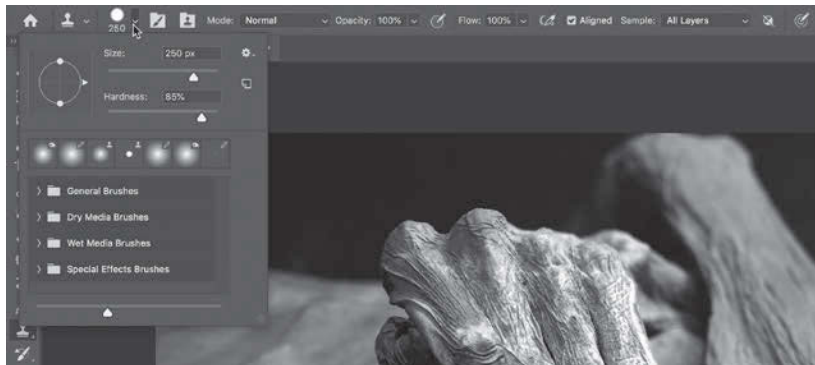


FIGURE 7.21 Brush settings are in the Options bar. The brush hardness is set to 85%. You can also see the other tool options set for cloning in this exercise.



**FIGURE 7.22** Sample from the mummy's knuckle with the Clone Stamp tool. Check to make sure the **finger** layer is active.

4. Zoom in using the same key commands as in other Adobe applications, such as **Command-+/Ctrl-+**. Make sure the **finger** layer is active; this is where you want to place your cloned finger. Place the Clone Stamp tool (which basically functions as a brush with an extra sampling step) on top of the last knuckle. Press the Option/Alt key, and click just once in this location (**FIGURE 7.22**). Don't drag the mouse. You just told Photoshop that this is the area that you want to sample as you clone the new finger, and because the option for Sample is set to All Layers, you are allowed to sample from whatever parts of the image this brush covers, on any of the layers. There is nothing to sample on the **finger** layer, so the Clone Stamp tool will sample from the mummy finger on the **Background** layer.



**FIGURE 7.23** Paint a new finger using the Clone Stamp tool aligned next to the sampled finger.

5. Move the mouse to the right of the last knuckle and down a little bit to align it with a plausible location for a new knuckle (**FIGURE 7.23**). The Clone Stamp tool provides a preview of what the cloned image will look like in your composition so you can get the alignment just right before committing to a click. Click and drag downward, tracing the finger, until you reach the end of the fingernail (**FIGURE 7.24**). Save the file as **hoax-end.psd**, which you'll update at the end of the next exercise.



**FIGURE 7.24** The new finger in position. The brush hardness ensures that pixels are sampled accurately.

Congratulations! You just added a sixth finger to a mummy. In the next exercise, you'll clean the cloned image data to make the new finger blend with the rest of the composition.

## EXERCISE 4

# SOFTENING CLONED EDGES

### KEYBOARD SHORTCUT

Because you'll always work with white and black on Photoshop layer masks, you should remember that **X** is the hot key for swapping the foreground and background colors.

Fingers don't stay the same size from the knuckle to the nail, so because there are extra parts of the cloned finger that obstruct the view of the original composition, the viewer can tell that the image has been manipulated. In this exercise, you'll use a layer mask to hide extra parts surrounding the cloned finger. Consider this exercise to be a brief introduction to the layer mask. You'll learn more about layer masks in the next chapter.

1. In the Layers panel, activate the **finger** layer and then click the Add Layer Mask button (FIGURE 7.25). You'll see a new icon in the Layers panel: a white square next to the layer icon of the finger.
2. The layer mask is used to hide or show parts of a layer. Because the **finger** layer contains only the extra, cloned finger, the mask will affect only this image data. You could work with the Eraser tool to delete image data, but instead it is preferable to work non-destructively, to simply hide (rather than delete) pixels. Layer masks operate in white (show the layer content), black (hide the layer content), and shades of gray (partially hidden). Press **B** to select the Brush tool (or locate it nested with the Pencil tool in the Tools panel), and press **X** to load black into the foreground color chip (FIGURE 7.26).
3. View the Brush tool options. Set the Hardness value to 0, as you'll want to use a soft-edged brush. Leave the Mode set to Normal and Opacity and Flow at 100%. You will adjust the size using the keyboard.
4. Before using the Brush tool, make sure that the mask is active in the Layers panel. You can click once on the layer content thumbnail or on the mask icon. Notice that whichever is activated is framed with white edges around its icon and near the file name (at the top of the document window) additional information confirms your location in the file's organizational structure (FIGURE 7.27). When you're sure that the mask is active, you are ready to set the size of the brush and then paint black around the edges of the finger where you want to hide the extra image details (FIGURE 7.28).



FIGURE 7.25 While the **finger** layer is active, click the Add Layer Mask icon to create a mask specific to this layer.

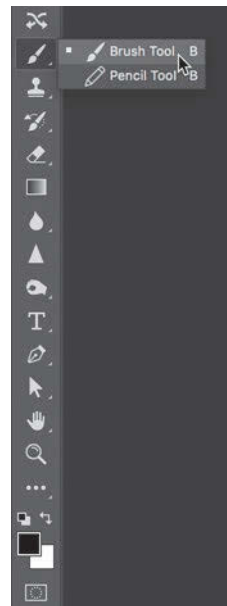
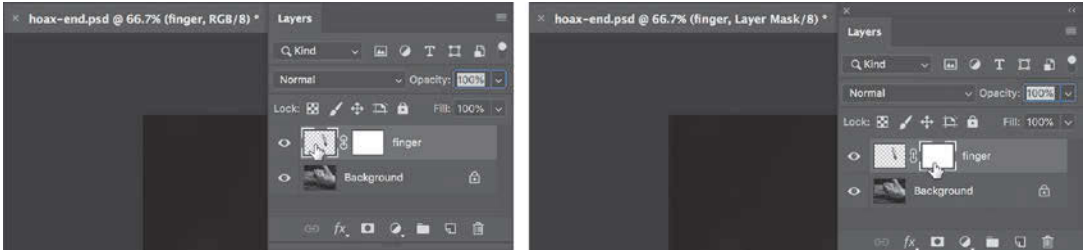


FIGURE 7.26 The Brush tool is selected with black loaded into the foreground color chip.



**FIGURE 7.27** Click the layer content icon or the layer mask icon to make adjustments to the layer or its mask. Notice how the information near the name of the file updates depending on which part of the file is activated.

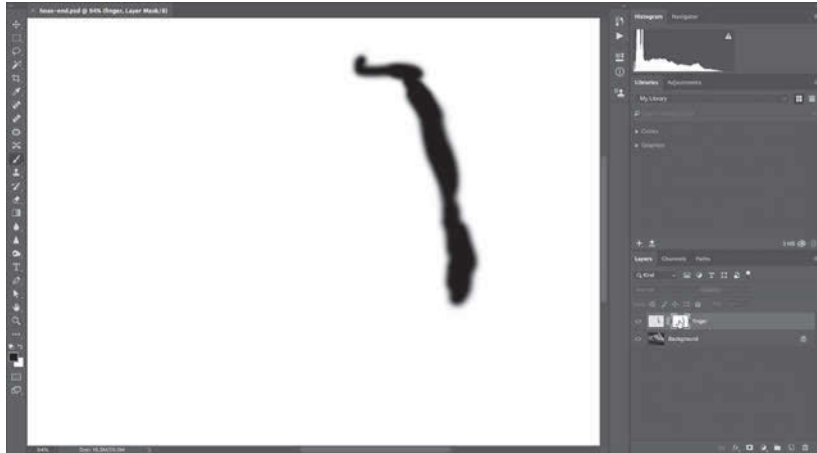


**FIGURE 7.28** Extra image details are hidden by painting the mask black in those areas. Here you can see the black brushstroke on the layer mask icon.

5. Notice that the layer mask now contains an abstract black painting on its white background. Option-click/Alt-click the layer mask icon in the Layers panel to show just the mask in your composition (**FIGURE 7.29**). The black areas of the composition are hidden. The white areas are revealed. Look for gaps between the black and white areas. You may want to review those parts of the composition and add more black or white paint to fill in the gaps. This is an easy way to clean the mask because you can easily see how the image details are being treated. Option-click/Alt-click the mask icon in the Layers panel again to resume the normal working mode and continue to modify the layer mask (**FIGURE 7.30**).



**FIGURE 7.29** A view of the **finger** layer mask. The white areas are visible in the document. The black areas are hidden from view (or masked). Any gaps would be filled in with the Brush tool using black.



**FIGURE 7.30** The mummy finger hoax is complete and visible in normal editing mode.



6. Remember to view the document at actual size and then save the file.

## LAB CHALLENGE

Create a hoax! Modify a current news story by using the repair and clone tools you learned about in this chapter on a fictitious news image. In news photography, the caption is important, too. Don't forget to write a caption to accompany your newsworthy image.



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