



THE HIDDEN POWER OF  
**BLEND MODES**  
IN ADOBE® PHOTOSHOP®

**SCOTT VALENTINE**

FOREWORD BY JOHN NACK  
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*For my wife, Carla, and our own little blend, Austin.*



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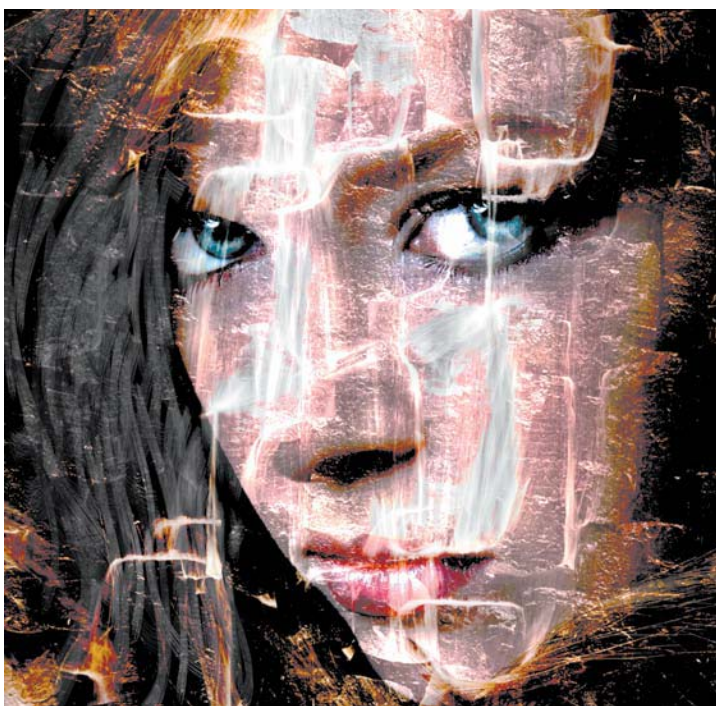
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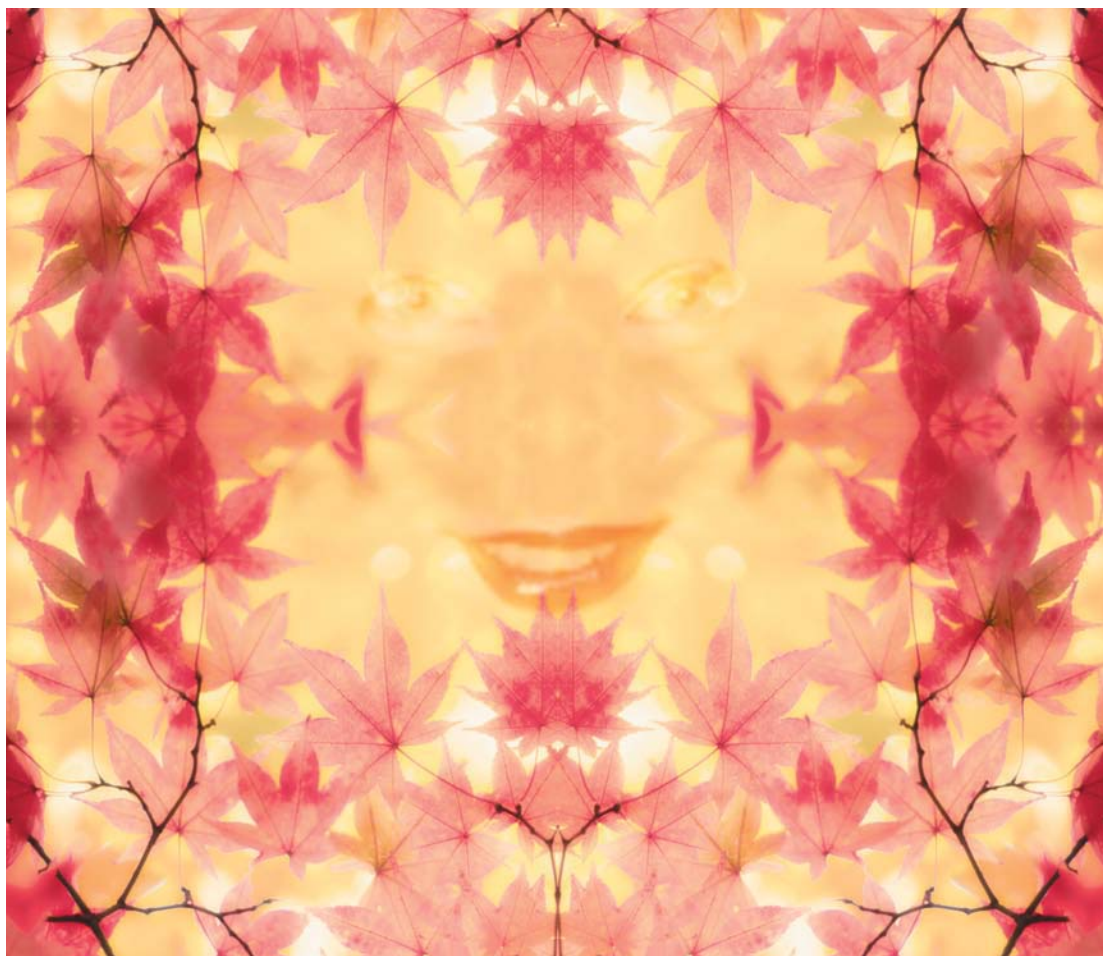
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## FOREWORD

To paraphrase Einstein, “Science without art is lame; art without science is blind.” At its best, Photoshop blends math, art—and heart.

You’ll find all three in Scott Valentine, and in his merry band of contributors to this book.

To write poetry, you’d best understand grammar. Featuring well over 500 menu commands and dozens of tools, Photoshop can appear overwhelming, but like any language, it can be broken down into a series of parts. Understand how those parts relate, and you can do nearly anything.

In the language of Photoshop, blending modes are like adverbs: They govern how something is done, often making a night-and-day difference.

With their often inscrutable names (what the heck is “Linear Dodge (Add),” complete with parenthesis?), blending modes can draw blank stares from even seasoned Photoshop vets. These mathematical formulae, however, are vital to producing things as “simple” as the common drop shadow effect. So, how does one efficiently grok enough theory (but not too much), while keeping the focus on real-world results?

That's where Scott comes in. Much to the envy of us arts-and-letters-only types, Scott combines a technical mind (he's trained as a physicist) with the down-to-earth generosity of a great teacher. These qualities have won him the support of more than a dozen industry luminaries (Julianne Kost, Eismann, RC Concepcion, Matt Kloskowski, and Calvin Hollywood, to name a few) who have contributed tips and recipes to this book.

Aimed at intermediate users—but with enough info to get beginners up to speed plus a few advanced tricks for the pros—*The Hidden Power of Blend Modes* will have you saying “Wow, I didn't know Photoshop could do that (or, at least, could do it that quickly).”

Happy blending,

**John Nack**





# PART I

# **BLEND MODE BASICS**

Get up to speed with the fundamentals of how Adobe Photoshop blend modes work and the best ways to use them effectively.



# CHAPTER 1

# **INTRODUCTION**

This chapter explains some general concepts that you'll need to understand as you get started with blend modes in Photoshop CS6.

Normal Dissolve
Darken Multiply Color Burn Linear Burn Darker Color
Lighten Screen Color Dodge Linear Dodge (Add) Lighter Color
Overlay Soft Light Hard Light Vivid Light Linear Light Pin Light Hard Mix
Difference Exclusion Subtract Divide
Hue Saturation Color Luminosity

Why write a book about blend modes? Doesn't the Photoshop world, by and large, know what they do? As it turns out, no. Most users, even those proficient in digital editing and artwork, have a few favorite modes they rely on. But when they venture outside of those three or four favorites, they are usually just flipping switches to see what they like. (I do this a lot myself, especially when I don't really know what I want.)

Also, blend modes are pervasive. Photography, special effects, graphic design, and even painting—they all have blending modes lurking around somewhere. Chances are you already use them frequently, but may not give them much thought. It's time to change that.

As you'll see in the guest entries in this book, top Photoshop experts have their own secret sauces and reasons for using blend modes. Some uses may seem simple, but that simplicity is the result of significant exploration. Other uses are fairly complicated, stacking layer after layer of detailed operations. Most methods, however, are somewhere in between—utilizing lots of power and flexibility but in only a few steps that are not always obvious.

Personally, I find myself turning to blend modes to meet a variety of imaging challenges. Whether blending, correcting, or tweaking, I nearly always throw some blend mode power into the mix.

This book is intended to make blend modes comfortable and frequently used, the way *you* would use them. I've organized the techniques into three major sections to accommodate all kinds of digital artists from photographers to illustrators, from painters to designers. And if you're a member of the ever-expanding group of artists who cross these boundaries, you should feel right at home.

Most of the techniques are not just combinations of blend modes, but combine multiple resources while featuring blend modes as a core component. You will be mixing and matching many tools and approaches, such as adjustment layers and filters, brush tools, and even channels. Every technique is aimed at flexibility and meeting real-world challenges.

That is not to imply that this book represents an exhaustive study of all possible blend mode techniques. Due to space and time considerations, I had to choose which methods to show, and which to save for another time.

## CREDIT WHERE CREDIT IS DUE

While I have done my best to provide original content, I have to thank the Photoshop community at large. It would be impossible for me to cite every source and reference that inspired

and informed me. But I feel obligated to give special thanks to a few folks named in the Resources section of the Appendix and in my thank-you notes at the end of this introduction.

Some popular and well-known techniques have been omitted from this text. Specifically, noise reduction techniques are omitted here. Newer cameras and third-party software, as well as Photoshop's native tools and those in Camera Raw, do a much better job in this arena than all the blending techniques I've seen (with the possible exception of hand-painting).

## HOW BLEND MODES WORK

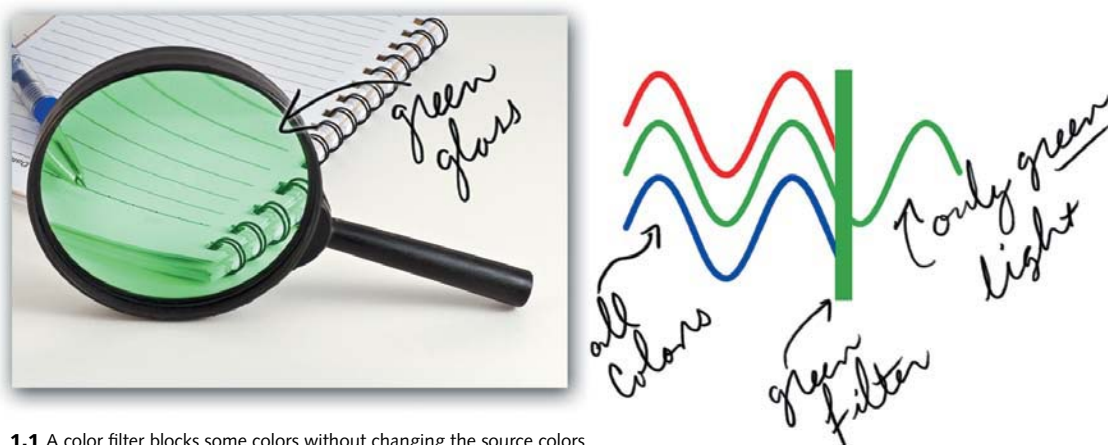
When you get right down to it, blend modes are equations. They take input values, do something to them, and give you an output. In the simplest case of a Photoshop image with two layers, each layer is input, the top layer's blend mode is the equation (or function), and you see the output on your display.

For blend modes to work, we need at least two layers in Photoshop. The techniques in this book refer to the bottom layer as the "base," and the top layer as the "blend." The blend layer is the one whose blend mode controls the output.

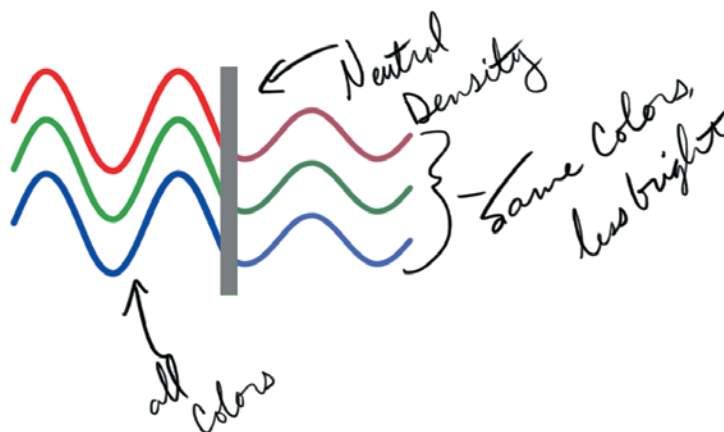
It's worth noting that the blending process does not change the actual inputs. The blend mode affects only the image rendered to the screen. In this sense, the output is *virtual*: it's not actually written to the file when you save your document. Here's an example to illustrate this:

When you peer through a piece of stained glass, the image you perceive looks different (1.1). Looking through a chunk of green glass, for example, a plain white wall will appear green, even though the wall color hasn't actually changed. What's different when using this *colored filter* is the light passing through the tinted glass.

**NOTE** The idea of the output being virtual is subtle, but important. When you stack multiple blend modes and adjustment layers, the order in which the effects are applied starts from the bottom of the layers stack and goes up. Any changes you make to the lower stacks get propagated up through the stack, changing the inputs all the way.



1.1 A color filter blocks some colors without changing the source colors.

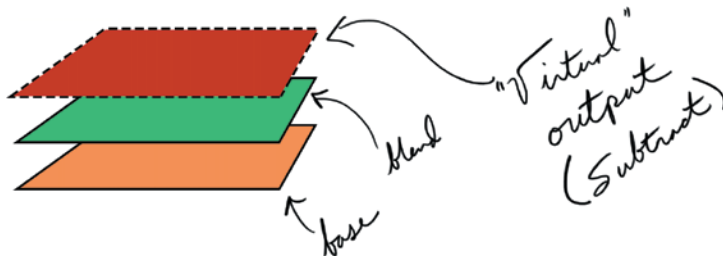


1.2 A neutral filter changes the perceived balance of the source colors.

**NOTE** In Photoshop, a filter changes the actual pixels on a layer, typically by moving them around and possibly changing colors. Because this works unlike the optical filter in our “green glass” analogy, I will use the phrase “Photoshop filters” to distinguish them from standard more general “filters.”

Has the light itself changed? Not in the physical world, as it turns out. The green glass simply blocks everything that isn’t green and lets only the green light pass. While this is a very simplified description, it describes basically how a *filter* works: It allows some elements to pass through while blocking others.

Filters come in many types. When you’re looking through the gray lenses of sunglasses (1.2)—or a neutral density filter, if you’re a photographer—you’re using a *neutral filter*. That type of filter reduces the intensity of light in general, but all colors remain visible.



**1.3** Blend modes also act to block or pass certain colors.



**1.4** Some blend modes achieve results by comparing pixels.

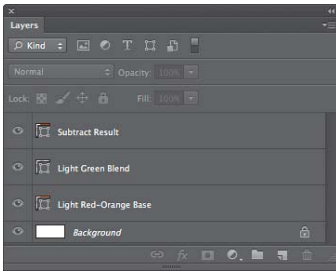
Blend modes appear to behave in a similar way when they act to block or pass certain colors. The Color blend mode, for example, does behave this way, and seems to block everything but the top layer's color (1.3). But blend modes can, of course, be much more complex. For example, some compare two pixels on adjacent layers and change their behavior based on the color or brightness of each (1.4).

Blend modes have two interesting features that should encourage you to experiment.

First, they do not change the file size of your document by themselves. Adding layers does increase file size, but changing the blend modes of existing layers does not. The sneaky addition to that is adjustment layers. They add very little to file size, and they can have blend modes applied to them. You'll find more detail on adjustment layers in Chapter 2, "General Techniques."

Second, blend modes are nondestructive. Because they are just instructions that alter your display output, you can change them whenever you like. They won't change the data on your layer, and you don't have to worry about losing your work.

**NOTE** Remember that blend modes take their inputs from values at specific pixel locations. If you consider that each layer in a Photoshop file is really a grid of pixels, and the contents of that layer can be moved around, it's easy to understand that each location can have unique information in it. As a result, a blend mode's output may look different as you move layer contents around and change the pixel-specific inputs of each layer.



**1.5** A glance at the interface shows the basic structure of a blend mode technique.

## CONVENTIONS USED IN THE BOOK

As you read this book, you'll find that many of the explanations repeat information. Experienced users may be able to simply glance at the layer stack screen shot (1.5) and get what they need. Readers who are less familiar with Photoshop may want to read the entire description and indulge in a little "try it and see." I've also included summary steps when I think they're useful to performing the technique.

In general, I've avoided providing specifics because every image will be different. Some techniques include a brief discussion on selecting good candidate images for a particular look, while others describe variations you can try depending on the image and your desired outcome.

In *all* cases, however, you should see each entry as a starting point. With an infinite number of possible images and an infinite set of possible outcomes, there is no way that one book (or even a library of books) could cover every variation.

All the screen shots were taken in Photoshop CS6 on a Mac, so a Windows-based interface will look a little different. Whenever possible, I noted any tools or techniques that are specific to one version of Adobe Photoshop. Similarly, when keyboard shortcuts vary between Mac OS and Windows, I've noted the difference.

## WHAT YOU NEED TO KNOW

To keep this book concise and broadly useful, I made some assumptions about what users should know before exploring these techniques. Beginners can certainly make use of this book, and I hope this introduction serves as a solid foundation for beginning and intermediate users.

So what should you know to get the most of out this book? You should be familiar with (not an expert on) the following:

- General layers operations, including creating and renaming layers, applying layer styles, and using masks
- How to make selections, and how to save those selections to a new layer or alpha channel

- Brushes, selection tools, and the options bar for later versions of Photoshop
- How to apply a filter from the menu and adjust its parameters
- Creating and editing gradients
- Using keyboard shortcuts

To take advantage of the more advanced techniques, you'll additionally need to know:

- How to use channels and what they represent
- Clipping layers
- How to create and edit Smart Objects and Smart Filters

After all of this, there is one absolute requirement you must have to get anything useful out of this book: curiosity. Everything presented here is a tiny slice of what *could be*. It's up to you to experiment and push beyond these examples and techniques. Consider each a starting point, and maybe just a piece of a much larger effort. Own what you do with this information, and enhance these techniques with your own creative spark.

## USING A DIGITAL TABLET

Many of the techniques in this book rely on fine adjustments, and some make use of painting tools. To get precision and to save some strain on your wrists, I highly recommend getting a digital tablet (1.6).



**1.6** A digital tablet permits additional accuracy and prevents wrist strain.

Aside from a computer and Adobe Photoshop, if I didn't have a digital tablet, I really couldn't get my work done. Wacom's ([wacom.com](http://wacom.com)) Intuos line is my favorite of the tablet options available.

I started this book with my trusty Intuos4, but switched to Intuos5 for the last month or so of writing. It's like my computer's trackpad grew up and added a pen. Digital tablets are meant to give you a more natural input method by using a pen, and with the Intuos5, your fingers. This creates a very comfortable experience, and also increases your ability to make detailed edits with amazing precision.

If you spend much time editing digital images, you should seriously consider a tablet. Ergonomically, they allow a more comfortable hand position, and get your entire arm involved, which is a key factor in avoiding the repetitive stress of using trackballs and mice (which I also use for standard office-type work).

## **GETTING MORE FROM BLEND MODES**

The single biggest thing you can do to further your knowledge of blend modes is to use them. Experiment, tinker, and fiddle with the knobs. As you build your Photoshop experience, you should approach most challenges by first defining them because defining a problem often defines much of the solution.

A great exercise is to pick one blend mode and take it out for a spin. See what it can do. Look for overall effects as well as details. Once you pick up on something, spend a little time digging in. Make notes, and try the same trick or steps on different images. Ask yourself what works, what you like, and what you don't like.

For additional help, look to online forums. You'll find many community-driven discussion boards, some sponsored by professional organizations and training companies. Adobe has its own community at [forums.adobe.com](http://forums.adobe.com). And don't forget about sites that have focused themes, such as photography and illustration.

In addition to the techniques on using blend modes that you'll learn in Section II of this book, you can find additional techniques on my site, [lightningsymphony.com/hpobm](http://lightningsymphony.com/hpobm).