Cloning Tips and Techniques

Cloning is one of Painter's most powerful and flexible features, allowing for a huge range of creative possibilities. Getting comfortable with using the cloning features can take time and a lot of experimentation, but will also bring many rewards. The most important thing to remember when cloning is that although you can automate parts of the cloning process, you'll still probably need to do some things "manually." Painter's cloning features are not intended to work like a plug-in filter, where you hit one button to apply the effect. Cloning works better the more creative input you put into it!

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So what is it, anyway? In its basic form, cloning allows you to recreate an image in another artistic medium. For example, you can take a photograph of a parrot and change it into something resembling a chalk drawing of a parrot. Or an oil painting. Or a watercolor. Cloning will also enable you to borrow "pieces" of one image and paint them into another image, without having to cut and paste.

How does it work? Cloning sets up a relationship between two separate images, called the source and the clone. The *source* image is the original artwork or photograph that you want to use or modify. The *clone* image is where you actually paint or draw to create your new, modified picture. Both the source and the clone are complete, full-fledged images, and both can be saved to disk like any image. *As you paint or draw into the clone, you "borrow" color information from the source.*

To accomplish this, you need three things: the source document, the clone document, and a "cloning brush."

A cloning brush is any brush that takes advantage of the source/clone relationship. You paint with your cloning brush into the clone image. The color of your cloning brush is not determined by the color chosen in the Color palette, as is the case with other brushes. Instead, your cloning brush uses the color found in a corresponding area of your source image. By "borrowing" the color from the source, you can recreate the likeness of your source image in myriad ways. Although you don't need to touch or modify your source image in any way for cloning to work, it must remain open as you clone.

Creating a clone image. The first step in cloning is setting up the source/clone relationship. The easiest way to do this is to first open the image you wish to copy, modify, or recreate (the source) and then select "Clone" under the File menu. This automatically does two things: 1) it creates a new image, identical to the source image; and 2) it establishes a source/clone relationship between the two. This relationship exists as long as both images are open during this Painter session. Closing one or both images will break the source/clone bond.

> **Hint: Erase the clone image first.** The File: Clone command creates an identical copy of your source image in the clone document. If you now paint over this image with a cloning brush, it will of course appear that brushstrokes have been placed on top of an existing image. This is perfectly acceptable, but not at all required. In fact, we often recommend that you *delete* everything from the clone image before you start laying down brushstrokes. The easiest way to do this is to hit [Command-A] and then [Delete] on a Mac keyboard, or [CTRL-A] and then [Backspace] on a PC keyboard. This will erase the image in the clone document, leaving you a clean, blank canvas for your masterpiece-to-be.
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> One reason you may choose to do this is when you want a blank paper color to show through the gaps in your strokes, like when using the Chalk Cloner to get the look of a pastel drawing. If you're using an Oil-type Cloner, however, you might want to leave the original picture underneath your strokes, to provide "fill-in detail" where the strokes don't overlap. Think of the difference in this way: the first method is like drawing with chalk on a blank canvas, while the second method is like creating the same drawing with chalk *on top of* a photograph. It all depends on the look you eventually want. Try it both ways and see for yourself!

Painting into the clone. Now we're ready to start cloning! Simply pick a Cloner brush from the Brushes palette and start painting into the clone image. You will start to see colors from the source image "come through" into your brushstrokes. In general, the more you paint into the clone image, the more you'll see of your original source image. However, depending on the cloner variant you've chosen, you will see one of two very different effects take place:

> **"Single" cloner brushes.** In the Brushes palette, choose "Spacing" from the Controls menu. You'll see that brushstrokes can be defined as Single, Multi, Rake, or Hose. How your cloner behaves depends, in part, on these settings. The simplest type of cloning brush uses the "Single" setting. This type of brush includes the Pencil Sketch Cloner, Felt Pen Cloner, Chalk Cloner, Melt Cloner, Driving Rain Cloner, Soft Cloner, and Straight Cloner. When you use a "Single"-type cloning brush, *the color will vary throughout the stroke* as you pass over different areas of the source. For example, say that you were cloning a photo of a sailboat. If you took the Chalk Cloner and scribbled one long, single stroke over the whole image, the color of the brush would change mid-stroke to match the underlying photo's colors: the blue of the sky, green of the ocean, and the white of the sails. You could reproduce the image of the sailboat with a single, long, scribbly brushstroke, if you liked. Think of the sailboat photo hung behind a very dusty pane of glass. The "single" cloning brushes would be like wiping away the dust on the glass, revealing the image underneath.

> **"Multi" or "Rake" cloner brushes.** Cloners built on the "Multi" type include the Hairy Cloner, Oil Brush Cloner, Hard Oil Cloner, and Van Gogh Cloner. These brushes use multiple bristles, hence their name. When you use a "Multi" or "Rake"-type cloner, *the color will not vary throughout the stroke* as you pass over the image. Using our sailboat example, say that you started a Hairy Cloner stroke on an area of your image that matched an area of sky. Your stroke would come out some shade of sky-blue. However, as you continued the same stroke over the image, your stroke would remain sky-blue. If you scribbled one such stroke back and forth over your image, all you'd get would be one long of scribble of a single color. Because of this, these cloning brushes are usually used <u>*in short strokes or dabs*</u>. As you build up many short dabs into the image, each dab reflects a different color from the source. When you've put in enough dabs, your original image begins to become apparent. Think of this like glopping dabs of paint onto the dusty glass on top of the sailboat photo. Each small bit of paint matches the color behind it. With enough glops, you'll see the shape of your sailboat emerge.

Try out both types of cloning brush so you can see firsthand this fundamental difference. You can even change a "Single" brush to a "Multi," or vice-versa, by simply clicking on the buttons in the Brush Controls : Spacing palette.

So, besides "Single" and "Multi," what's the difference between the different cloning variants? Even though the Pencil Sketch Cloner and the Driving Rain Cloner are both "Single"-type brushes, they create very different-looking brushstrokes. This is the magic of cloning in Painter: these brushes don't reproduce the source image *exactly*. Instead, they introduce variations, based on the size of the stroke, shape of the "dabs" that comprise the stroke, and what kind of variant it is. The Pencil Sketch Cloner creates a very thin, solid line, while the Driving Rain Cloner produces a wider, softer stroke with separate, rain-like dabs. All of the Cloners are designed to give you a different type of cloning "look." The only cloning brushes that recreate the source image *exactly* are the Straight and the Soft Cloners.

> **Hint: use the Straight or Soft Cloner to restore detail.** The Straight and the Soft Cloners are very handy. While cloning an image, you may often find that much of the fine detail of the original image is lost. This is due to the variations that the cloning brushes intentionally introduce. If you need to recover more fine detail for a particular area of your image, use the Straight or Soft Cloners. Setting the Opacity (in the Controls palette) of these brushes to a low setting will allow you to brush in a faint layer of "exact" detail from the source image. The more you use these cloners in an area of your image, the more the original image will show through. Setting the Opacity to a low value is important - otherwise, the Straight or Soft Cloner will splash in the original image at full opacity, eliminating any attempt at subtlety! The only difference between these two brushes is the Straight Cloner has hard edges, while the Soft Cloner has soft, faded edges.

> **Hint: Tracing Paper.** Are you lost while painting into your clone? Can't tell "where you are" in the source image? Use Tracing Paper. At any point after using File: Clone, you can hit the Tracing Paper icon in the upper right corner of the image window (or press [Command-T] on a Mac or [CTRL-T] on a PC). You'll see a faded version of your source image appear in your clone (if you haven't deleted the original image out of the clone as described above, you won't see much happen). As with real tracing paper, you can use this feature to see exactly where your brush is in relation to the source image. Toggle Tracing Paper off again to see your image by itself. You don't even have to use a cloning brush while using Tracing Paper - all it requires is that you have a source/clone relationship between two images. In fact, many people scan in a sketch they've done on real paper, clone it, and then

use Tracing Paper to see the sketch as a reference for their brushstrokes - all without cloning at all.

Customizing your cloning brushes. The fact that the Cloners are normal brushes like any other brush in the program means they can be customized like any other brush. Modifying the default Cloners will greatly increase the number of "looks" you can produce with cloning. The best way to figure out how to customize a brush is to experiment with the many settings Painter allows you to change. Here is a partial list of the aspects of a brush that can be modified in Painter:

Brush Attribute	Description	Palette location
Size	Stroke size	Brushes palette: Controls menu: Size
Opacity	Stroke transparency	Controls palette
Grain	Amount of texture in stroke	Controls palette
	(for brushes with "grainy" method)	
Paper Texture	Type of texture in stroke	Art Materials: Papers palette
	(for brushes with "grainy" method)	
Squeeze	Roundness of brush shape	Brushes palette: Controls menu: Size
Angle	Rotates the brush shape	Brushes palette: Controls menu: Size
Captured	Chooses a captured brush shape	Brushes palette: Controls menu: Size
Single/Multi/Rake	Chooses single or compound brush	Brushes palette: Controls menu: Spacing
Method	Defines the behavior of the brush	Brushes palette

Don't be overwhelmed by the number of combinations available in Painter. Simply experiment to see what they do. The best way to experiment is to use the Brush Look Designer.

> **Hint: the Brush Look Designer.** This utility is an extremely valuable way to experiment with making changes to your brush. The Brush Look Designer shows you a real-time preview of your brushstroke as it is currently configured. For example, say you want to try changing a brush's Method, but you're not sure what all the different Methods mean. Just try out a different Method and you'll see your stroke change instantly in the Designer window. Experiment with all the attributes listed above and see how they affect the stroke. The Brush Look Designer works equally well for cloning and non-cloning brushes. You'll find the Brush Look Designer in the Brushes palette under the Brushes menu.

Hint: changing a regular brush to a cloner. Can't find the cloning brush you want from the list of default Cloner variants? Try turning a regular brush into a cloner! Just choose the brush you want to use, then click the "Use Clone Color" checkbox in Art Materials : Colors. Again, you can use the Brush Look Designer to preview your stroke. Say you want to recreate a photo in watercolors. Since there is no default Cloner variant provided that does this, choose one of the Watercolor brushes, turn "Use Clone Color" on, turn on the Wet Layer, and begin cloning.

Automating the cloning process. The most direct way to clone an image in Painter is to paint strokes manually using a cloning brush and the techniques described above. However, Painter does provide several ways to automate brushstrokes, and these shortcuts can easily be used with cloning.

The first is **Auto Clone** (found under Effects: Esoterica), which automatically applies random dabs of paint over your image (or a selected area) using the current brush variant. The dabs are applied over the image in wave after wave, eventually filling up the image if you let it run long enough. Stop the process at any time by clicking once in the image window. This is an easy way to quickly fill an image with cloned color. If the final result doesn't show enough detail from the original image, reduce the brush dab size (Brushes palette: Controls menu: Size) and start Auto Clone again. The smaller dabs will allow more detail to show through.

The advantage of Auto Clone is that it quickly fills an area with cloned color. The disadvantage is that Auto Clone only uses dabs of paint, not brushstrokes. It's as if you're just hitting the tip of a brush against your canvas. To automatically play back *brushstrokes*, you need to use the Record Stroke feature.

Record Stroke (Brushes palette: Stroke menu:) allows you to record a single brushstroke and play it back, either a single stroke at a time, or automatically in random places on your image. You could, for example, record a long, diagonal stroke. Using the "Auto Playback" feature, Painter would then randomly apply this stroke over your image using the brush of your choice. The final effect is similar to Auto Clone, except you're using brushstrokes instead of brush dabs. Like Auto Clone, Record Stroke will utilize any brush you have chosen in the Brushes Palette - cloner or not. Consult the Painter User Guide for details about using Record Stroke.

Other ways to set up a source/clone relationship. Using File: Clone isn't the only way to set up a source/clone relationship. What if you want to clone part of one existing image into another existing image? One answer is to use the "Clone Source" option in the File menu. Open both images as you would normally. Now, select File: Clone Source. In the submenu, you will see the names of both images listed. Select the image you want to be the source, and that's that. All you have to do now is move to the "clone" image and start working. The name of the your current source image always has a checkmark next to it under File: Clone Source.

Understanding source/clone mapping. The source/clone relationship we've been talking about is really a way of "mapping" one area of an image to another area. Normally with a source and a clone image, the upper left corner of the source is mapped to the upper left corner of the clone. But what if you want to modify this mapping? Say, for instance, that you want to paint into the upper left corner of your clone image, but you want to clone a flower found in the lower right corner of the source. You can change the mapping using the following method:

Make sure you have the Brush icon chosen in the Tools palette, and switch to your source image. Holding down the Shift key on your PC keyboard, or the Control key on your Mac, your brush cursor will change to a crosshair cursor. Now click in the source image where you want the mapping "origin" to be. In our example, you'd click on or near the flower in the lower right of the source. Now, return to the clone and start painting with a cloning brush in the upper left. The flower will begin to appear at the point where your first cloning stroke begins. Try it!

If both the source and clone images are visible on-screen at the same time, you'll see a crosshair move around in the source as you paint with your cloner brush. This crosshair shows what part of the source you are currently working with. If you don't see the crosshair, select "Indicate clone source with cross hairs while cloning" under Edit: Preferences: General.

> **Hint: cloning within a single image.** Using this method, you can clone part of one image onto another part of the same image. Just Shift-click (PC) or Control-click (Mac) on the "source area" you want to use, and paint somewhere else in the image using a cloning brush. This technique is very handy if you want to duplicate a texture or pattern in multiple places in the same picture. It's also useful if you need to "borrow" a piece of an image and replicate it somewhere else. As explained in the previous paragraph, you'll see a crosshair move around as you paint. This crosshair marks the area that's currently acting as your clone source.

Conclusion. Hopefully, this chapter has gotten you started in power-cloning! Remember to consult the Painter User Guide for basic information on all these techniques, and the Painter Tutorial for more help with cloning.