



infinite and seamless, organic or surreal.

make beautiful procedural textures.

**the Texture Anarchy suite.**

a suite of three filters for Adobe Photoshop

[ from Digital Anarchy ]

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# texture anarchy : overview



Welcome to the latest and greatest from Digital Anarchy. Here at Digital Anarchy, we are very passionate about fractal noise, gray maps, and putting them to proper and creative use. And thus is born Texture Anarchy.

## about texture anarchy

Texture Anarchy is a set of plug-ins for creating procedural textures and borders. With these filters, you can create a massive variety of seamless, infinite textures that range from realistic and organic to bizarre and surreal. The three plug-ins in this suite are TAE (TAE), Tiler Texture Anarchy (Tiler), and Edge Anarchy (Edge).

The Texture Anarchy suite creates 'procedural' textures. This means that a mathematical approach is used to generate, extend, and output an image. Users of Bryce or similar programs will be familiar with procedural textures, as they are used extensively to create the textures that make up rocks, grass, sand, and other surfaces.



## about digital anarchy

Digital Anarchy® is a privately owned company operating out of San Francisco, CA. Digital Anarchy® is devoted to creating high end and high quality software products for broadcast designers in television and film. These products solve a wide range of problems that face designers, from creating text effects and background elements to the addition of lighting effects in 2D compositing applications. The products work in conjunction with a wide range of applications from companies like Adobe®, Discreet™, and Apple®.

for more information, please go to: [www.digitalanarchy.com](http://www.digitalanarchy.com)

## about ambient design

Ambient Design is a New Zealand based software development company specializing in contract work for remote clients. The company was founded on a strong graphical basis after the founders left MetaCreations in January 2000, but has grown since then to encompass Internet development, cross platform development, and a wide range of technologies. Ambient was founded with the intention of creating a strong engineering company that would provide an output for some of the talent available in New Zealand. Over the last two years they have worked for a wide range of international companies providing complete engineering services from design to implementation. Goblin is Ambient's engine that runs beneath Texture Anarchy.

for more information, please go to: [www.ambient.gen.nz](http://www.ambient.gen.nz)



We hope that you find Texture Anarchy to give you all the control you could want, while simple enough that you can set everything up in a few minutes. It's our desire to make sure you're satisfied with your purchase, and if you have any questions, comments, or whatever, we'd love to hear them.

## contact information

If there's anything you'd like to see added to any of the filters, perhaps a completely different effect that you'd like to see in a plug-in. Or if you would just like to say hello... definitely send an email to us at [info@digitalanarchy.com](mailto:info@digitalanarchy.com).

If you have any technical problems or questions related to the filters, please send an email to [support@digitalanarchy.com](mailto:support@digitalanarchy.com).

Alternately, you can contact us at +001-415-621-0991, US Pacific Time.



## macintosh [ photoshop ]

Launch the Texture Anarchy installer. In the main window, you'll see a pop-up in the upper left corner that asks you to select your OS. Texture Anarchy supports OS 9 and X, but you need to select which one you're installing for. It is important that you select the correct version for OS 9 or X. The filters may not work otherwise.

note : If you are using PS 6.0 or earlier under OS X, please select the filters for OS 9.

note : Using Texture Anarchy in a Classic application under OS X may result in a significant slow down on some machines.

Once you've selected the correct version, in the lower part of the window is the installation destination. Click on 'Select Location' and navigate to your Photoshop (or compatible) 'Plugin' folder. You are now ready to install. Click the Install button.

The installer will ask you for a password. This is the serial number that was sent to you when you purchased the plugin. If you did not receive it, please contact technical support immediately.

## windows [ photoshop ]

Launch the Texture Anarchy installer and click the 'Next' button until you get to the 'Locate Destination' screen. Click on 'Browse' and select the Photoshop plug-in folder. Click 'Next'.

When you get to the registration screen, the installer will ask for your serial number. This should have been supplied in the email that was sent to you when you purchased the product. If you did not receive it, please contact technical support immediately.

You are ready to install. The installer will show a screen informing you of this. Click the 'Next' button to begin installation.

## registration

Registration occurs when you purchase the filter. We register you in our database using the contact information you supplied upon purchase, and the serial number we've given you.



There are three plug-ins in the Texture Anarchy suite. Each provides a different output with seamless procedural textures. We feel these textures have a place in all fields and media forms, as explained below.

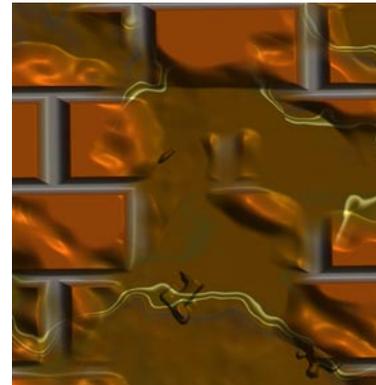
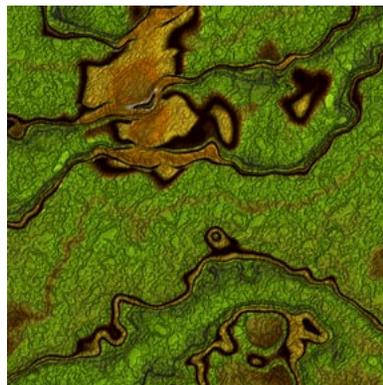
All three filters have similar functions and interface setup. Once you know one, the others make more sense.

### texture anarchy explorer

This plug-in creates seamless procedural textures. As with the other two filters, these textures are not based on any imported graphics. Instead, the pattern is determined by mathematical algorithms.

Texture Anarchy is set up as a series of rooms, or levels. Each successive Room gets more intricate, and provides a deeper accessibility to detail. The easiest is the Main Room, where you can use the Mutator to randomly create textures or load in presets from a Preset Manager. The second-level Layer Editor Room is the starting point for you to edit materials and construct your own textures. The Deep Noise Room allows you to explicitly edit each texture well, basically, make materials for the materials.

Between the Deep Noise Room and the Layer Editor, the only limit to what you can create is your imagination.





## tiler texture anarchy

Tiler Texture Anarchy is very similar to TAE in layout and functions. The main difference between Tiler and TAE is that the Tiler's transform properties are locked to certain proportions. This is so the algorithm can repeat itself successfully.

The Tiler is especially useful for doing 3D texture mapping. With 3D programs, memory can be a problem, particularly if you're doing games, so being able to create textures that repeat themselves seamlessly is important.

It's also good for creating a high res print background. Once you've in Photoshop, select the texture you've just rendered out and go to Define Pattern in Edit menu. When you apply that Photoshop Pattern to a canvas using Edit> Fill> Pattern, it will seamlessly repeat itself.



## edge anarchy

Edge Anarchy is a filter that's designed to create textured, distressed, or ornamental borders around images and text. You can use the materials you create in Texture Anarchy to manipulate the edges of images, adding color and texture, and distorting the image.



Edge

Edge



## procedural textures

All three Texture Anarchy filters are procedural texture generators. Procedurally generated textures are a diverse topic, and can be 2D or 3D based. They are commonly used to simulate naturalistic effects such as fire, smoke, clouds, and marble formation.

Procedural textures are based on fractal noise.

## fractal noise [ overview ]

Fractal noise is the methodology of using randomness and grayscale values to create textures and objects that cannot be described using simple geometric shapes. Use fractal noise to create organic-looking backgrounds, displacement maps, textures, and mattes. You can also simulate things like caustics, clouds, lava, flowing water, and gas. Some of Photoshop's built-in filters, like Rrender > Clouds, use fractal noise.

If you look at many things in nature, you will notice that they have various levels of detail. Three great examples are a field of grass, an expanse of sand, or an ocean of water. All of these expanses contain wide variations in height from large (a hill, dune, or wave) to small (a mound of sand to a ripple of water).

All these phenomena exhibit the same pattern of large and small variations. This means that they can be broken down and recreated as fractal noise. The Perlin Noise function recreates this by simply adding up noisy functions at a range of different scales.

A fractal algorithm, by definition, is a repeating pattern that goes on endlessly. It's mathematically based and can just go on forever.

Sometimes you can get the fractal to repeat seamlessly, and that's what we've done with the Tiler. Sometimes the fractal creates a pattern. That pattern can be random. Other times it repeats itself, but not exactly in the same way, and that's how TAE works.

[please see the section about fractal noise, and how it fits your lifestyle](#)



So now you've installed the Texture Anarchy suite, opened or created a document in Photoshop, and you're ready to go.

To apply any of the TA filters, simply go to Photoshop's Filter menu and choose 'TextureAnarchy'.

### applying any of the filters

The Texture Anarchy filters open up a custom interface for you to work within...

The point to keep in mind is that even though you can't see Photoshop's palettes or menu, you are still working in Texture Anarchy inside of Photoshop. You haven't opened another program. You've applied a filter that happens to be so cool, so fun, so deep, that it requires its own interface. ;-)

Texture Anarchy can be applied and reapplied using the standard Photoshop key commands for filters. Apple-F [Control-F] applies the last filter used. Option-Apple-F [Alt-Control-F] opens the interface of the last filter applied.

### how this affects the photoshop file

When you apply a Texture Anarchy filter, you are simply adding an image to the selected layer of your Photoshop file.

Once that texture is set down, it becomes part of your Photoshop file. Meaning, you can't double-click on the layer to 'reopen' TA and further edit that texture. Saving Presets will allow you to accomplish the equivalent of this task; see Section xx for more details.

#### tip :: edge anarchy

In the case of Edge Anarchy, it helps to apply the filter to a normal Layer in your Photoshop file, and not the Background layer. Edge Anarchy discards parts of the image to create its effect. So, it's useful if the layer it is applied to can have transparency.

The Background is the bottommost layer of Photoshop files and can't have transparency. In your Layer palette, it'll be marked with 'Background' and a little padlock next to it.



### photoshop properties stay intact

If your file has multiple layers, the layers that weren't designated will stay untouched, as with any other Photoshop function or filter. All Photoshop related aspects of that layer, and the reset of the file, will stay intact. So, any opacity settings, layer masks, layer effects, drawn selections, etc, will be respected and stay as they were.

For instance, if your Photoshop file is in Grayscale mode, and you apply a colored texture, you will see only a grayscale version of that texture. TA previews some aspects of the texture in color (like the Color Gradient), and saves any presets you designate in color. But, ultimately, its output is defined by the settings of the Photoshop file itself.

### are there any limitations?

Not many.

For bit depth, you can work in 8-bit or 16-bit . For Image Modes, you can work in RGB, CMYK, and Grayscale.

You can't work in Bitmap, Index, Lab, or Multichannel mode, as with most Photoshop filters.

### can I import a texture?

No. You can't import a texture, or a pattern, or a scanned image of a texture or pattern, or anything else pixel based or vector based or even vegetable based. Well, maybe if it has a spicy flavor...er nope, no imports.

The reason is simple: As mentioned, these textures are mathematical algorithms. That's why they can extend themselves in infinite seamless fashions. You can't import a graphic and turn it into a mathematical formula. A mathematic formula needs to generate the graphic.

You can't import, but there are other methods to resource a graphic you may have. For instance, there are Blend modes available in the first level that will let your texture interact with the original Photoshop image. These work the same way as Photoshop blending modes. You can also turn off the color channel and just have the bump applied to the original image.

[read more about these functions throughout this manual](#)



All three filters are set up as a series of rooms, or levels. For TAE, its three rooms. For Tiling Texture Anarchy, its three rooms. For Edge Anarchy, its two rooms.

Each room has a greater impact on the texture you're creating, and an increasing level of complexity to its tools. Think of going from one level of a video game to the next. Or, walking through a foyer into a living room, into a family room. Each successive room provides a new, deeper level of accessibility to detail, information, and control.

These are plug-ins, therefore, that lets you go as deep into the 'mixing' process as you'd like. The deeper lying concepts may be difficult for folks who are new to noise, bump maps, etc. But that's why the initial output can be based purely on presets and mutated textures.

### two or three room structure

The three rooms you'll be hanging out in are the Main Room (level one), the Layer Editor Room (level two), and the Deep Noise Room (level three). Edge Anarchy skips over the Layer Editor Room, going from its Main Room directly to the Deep Noise Room.

Why does Edge Anarchy have only two rooms? Well, its Main Room incorporates some of the powerful functions of the Layer Editor Room. Some of the other complex functions for creating multi-layered textures were discarded, because they didn't fit into semi-transparent edge creation.

So, only two levels are needed for Edge Anarchy.



### moving between the rooms

You move forwards between rooms by clicking inside texture wells. Move backwards using back buttons and Photoshop commands.

#### forwards in tae and tiler

From the Main Room, click the Color Well or Bump Well to edit either component in the Layer Editor Room. Click the Alpha Well to go the Deep Noise Room for editing. In the Layer Editor Room, click any of the Layer Wells to edit that texture in the Deep Noise Room.

#### forwards in edge

From the Main Room, click on the Tint Well or Cutout Well to edit either component in the Deep Noise Room.

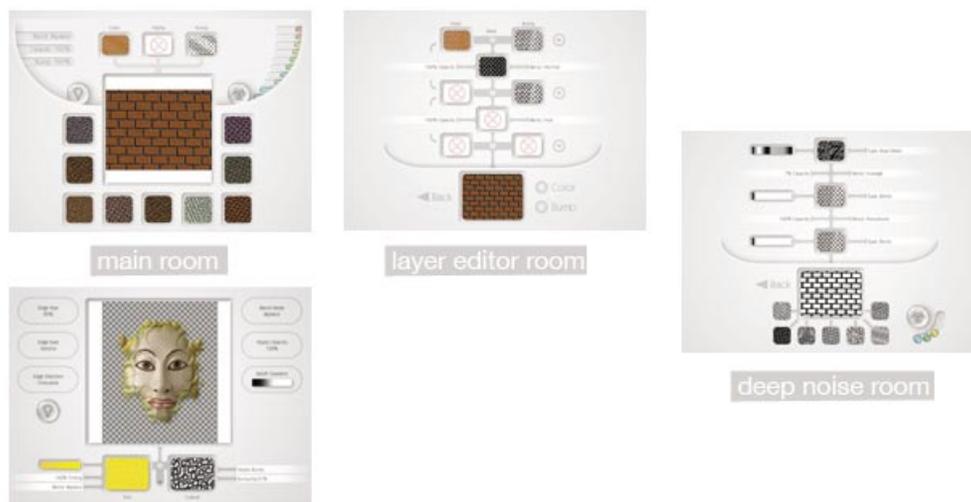
#### go backwards

You move backwards through rooms in one of two ways. Use the Back button in The Deep Noise Room or Layer Editor Room. Or, in any room, hit the Escape key on your keyboard.

#### quit the filter

In the Main Room, the Escape key will quit the plug-in and return to your Photoshop file.

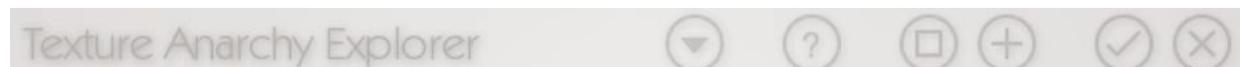
From the other rooms, you can hit Apple-Q [Control-Q] to quit altogether and return to your Photoshop file. Note: This will not quit out of Photoshop, just the plug-in.





### prompt menu

Along the top of all Texture Anarchy plug-ins is a menu of prompts. Through all of the screens, at left, you'll notice a text prompt that tells you which Room you're in.



When your cursor hovers over a tool in the interface, that Prompt area will turn into a brief explanation of its functionality.



### top menu buttons

In the Main Room, along the top right of the Prompt Menu, you'll find six buttons. These buttons provide accessibility to important basic functions.



Options Menu button. This pop-up menu gives you access to Render, Channel, and Screensaver options. See the section on Render Modes below for more details.



About button. Its gives you information about the partners and people who created TAE.



Preset Manager button. This gives you access to the textures that have already been created. See the section about Presets for more info.



Save Preset button. This allows you to save the texture that you are constructing in the Main Room. That texture is then available through the Preset Manager. The keyboard command for Save Preset is Apple+[Control+].



Apply button. Pressing this accepts the texture you've created, closes the TAE interface, and applies the texture to your Photoshop file.



Cancel button. Pressing this cancels out the texture you've been working on, closes the TAE interface, and returns you to your Photoshop file unchanged.



## render modes

The Render Modes determine the quality and speed of rendering your texture once you hit the Apply button. Render Mode does refer to the quality or speed of previewing the texture while working within TAE.

Basically, while you're in Texture Anarchy, you are working with a proxy of the graphic. When you finally apply the texture to your file, that's when the real rendering begins.

Your render choices are Fast, Normal, and High Quality. Work in Fast when you're figuring out your composition. Work in Normal if you're creating low-resolution textures, perhaps for the web or as a better pre-visualization. Otherwise, work in High Quality for graphics like 3D materials and high-resolution print.



This texture is from a one layer, 320x240 pixel, 72 ppi bitmap with Texture Anarchy applied.

The file renders out in 3 seconds at Fast Render, 8 seconds at Normal Render, and 8 seconds at High Quality.



Zoomed in 800%, you can see the difference in quality. The Fast Render [ left ] does not have a smooth gradation of tone. The High Quality [ right ] is less chunky, more continuous in changing from dark to light areas.



## render channels

TAE and Tiler give you channel options. The textures are constructed of a Color, a Bump Map, and sometimes an Alpha. You can choose to render out only one of these materials by making the appropriate choice: Render Color Channel, Render Alpha Channel, Render Bump Channel.

This can be useful if you just want one of the channels by themselves, perhaps for use with another filter, like the Displacement Map filter. Or if you want to use the resulting image as a layer mask, alpha channel, or other Photoshop feature that uses grayscale images.

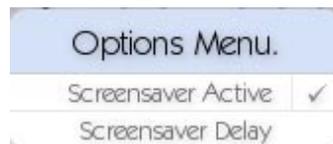
The Render Channel options are a quick way of getting the exact image you see in the Color, Alpha, or Bump wells to render out.



## screensaver options

You can choose to turn a Screensaver of the texture you are creating. If you select Screensaver Active, the screensaver draws onscreen rather quickly when it detects no activity.

You can delay the activation period as long as you'd like (though, really there's no sense in setting it above 30 minutes).

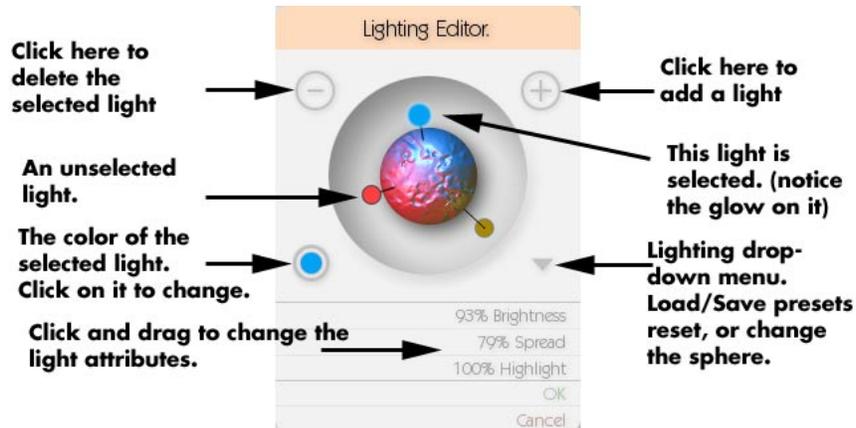


## section four : lighting and bump maps

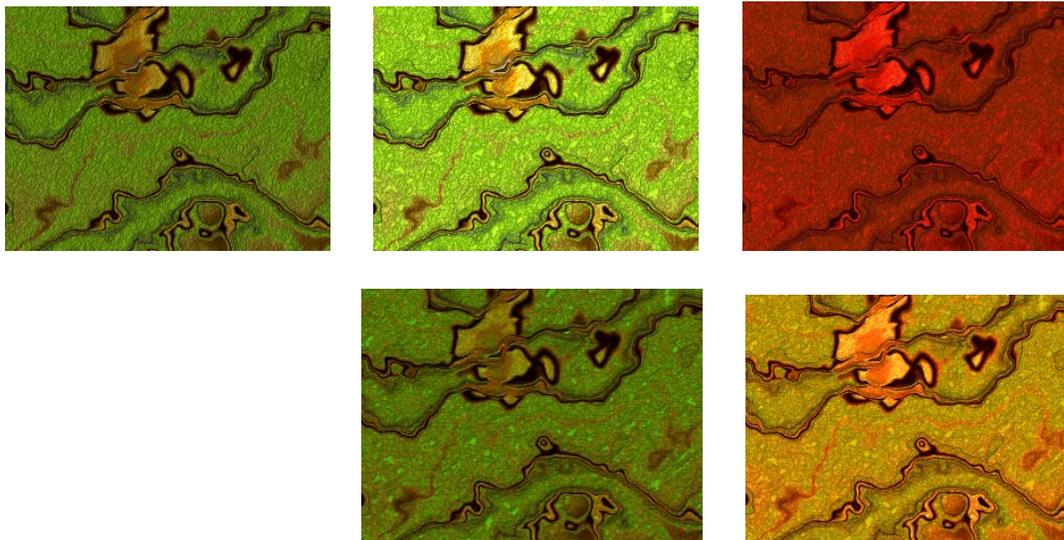


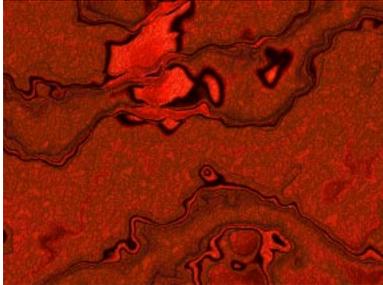
One of the less prominent but extremely important components of all the Texture Anarchy filters is the lights. A big, glowing light bulb icon opens up the Lighting Editor.

Here you can add up to four lights, change the lighting direction, adjust highlights, set shadow colors, and more. It's a very sophisticated lighting model that can create many effects. It works in pseudo 3D space; the textures aren't really 3D, but the lights create a bump map, which gives the appearance of 3D.

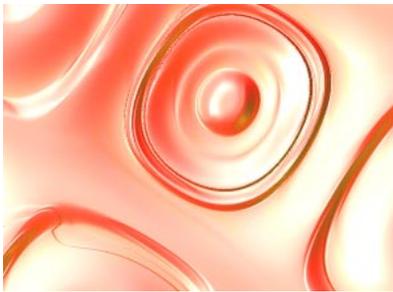


Here are some examples of how lights can manipulate color.





The lights can, and should, play a large role in coloring your textures. Although, it does depend on the nature of the texture. Organic, earthy textures will rely more on their inherent colors while shiny, metallic textures will rely more on lights.



It doesn't even look like martian soil... unless there's a red light district on Mars as well.

For metal, lights are essential to creating the effect. The shiny appearance can only be created with highlights, not with the Color channel.

### highlights

A highlight is simply the reflection of the light source on the object or material. Highlights tell us something is 'shiny'. A shiny object is just reflecting the light source. In a dark room, nothing is shiny.

Here's an example on how highlights tell us things. The light in all the images on the previous page are exactly the same. The only difference is how much of a highlight the texture is getting.

The highlight controls for the lights allow you to artificially control how much of a highlight a Highlight is going to produce. All textures will reflect light somewhat, even if highlight is set to zero. The highlight controls simply act as a multiplier for the natural reflection.

### tip :: effect of lighting

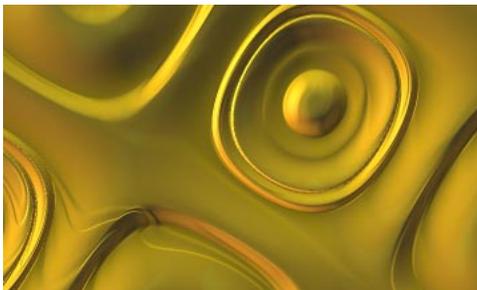
One important thing to note is that lighting can have more effect on a texture's color than the color channel. The lights can either bring out the inherent color of the texture or blow it away with a single strong light.

### brightness

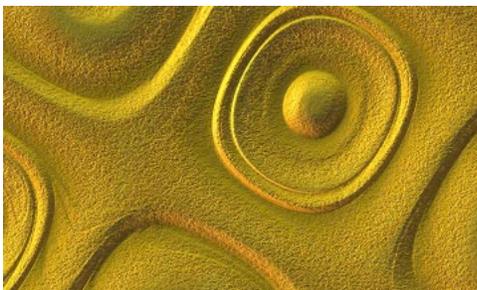
This sets the intensity of the highlight. This is the main component of the Highlight and how you turn it on or off. Spread works in conjunction with this and is discussed a bit further down.



In the first image, everything is shiny. You can tell this by the bright white highlights that look like they are reflections of the light source. In this case, Brightness is set to 100. The smooth surface of the texture also helps us discern that the texture is reflective. In general, smooth surfaces are going to reflect light better than rough surfaces.



In the next image, we've turned off the highlights, setting Brightness to 0, and all that's left is the smooth texture. As mentioned, all surfaces will reflect light somewhat, and that's true here. There's still a little light being reflected, but the overall effect is that the texture is not particularly shiny. Certainly nowhere near as much as the first image.



In the final image we've added a rough surfaces and the texture is now decidedly un-shiny. It looks more like a dusty rock, than shiny gold. Remember, we haven't made a single change to the light itself, other than the highlight.

### tip :: roughness

Roughness causes light to be diffused. Instead of one smooth surface to bounce off, the light bounces off many small surfaces. This causes the effect to be diminished, so even if the material of a shiny new toaster and a crushed old toaster is the same, the crushed, old toaster will appear to be less reflective as the light is broken up over the facets of the crushed metal. Poor toaster.

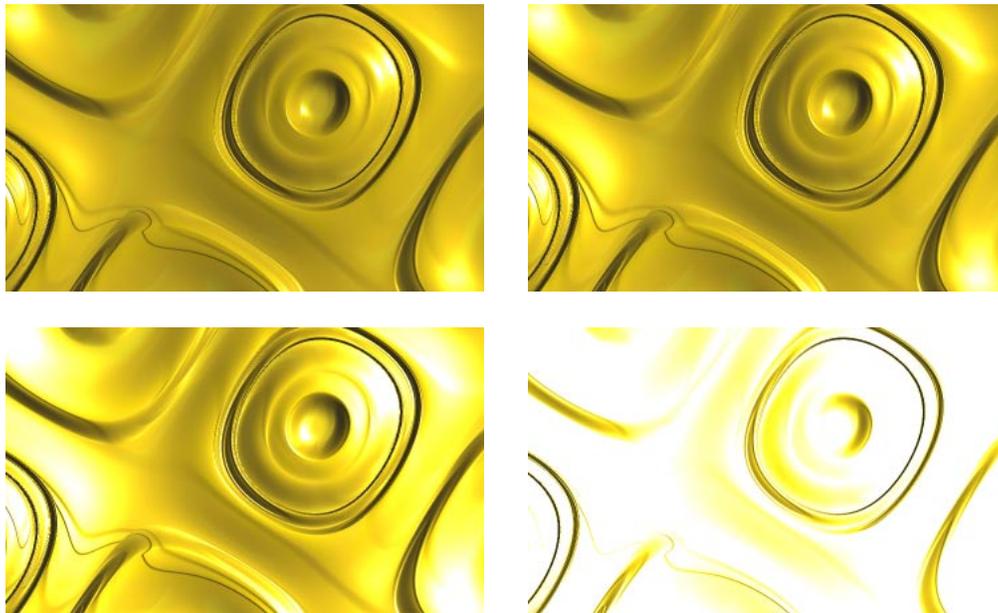


## spread

This increases the area that the highlight covers. For all intents it increases the overall brightness, sometimes completely blowing out the image. It's more designed to be used subtly, in conjunction with Brightness. Just cranking up the spread doesn't usually give you good results.

You can use Spread with the Brightness controls to create a highlight that is not as bright, but covers more area. This can be accomplished by reducing Brightness as you increase the Spread.

Increasing the Spread, while leaving Brightness untouched, results in something like this.



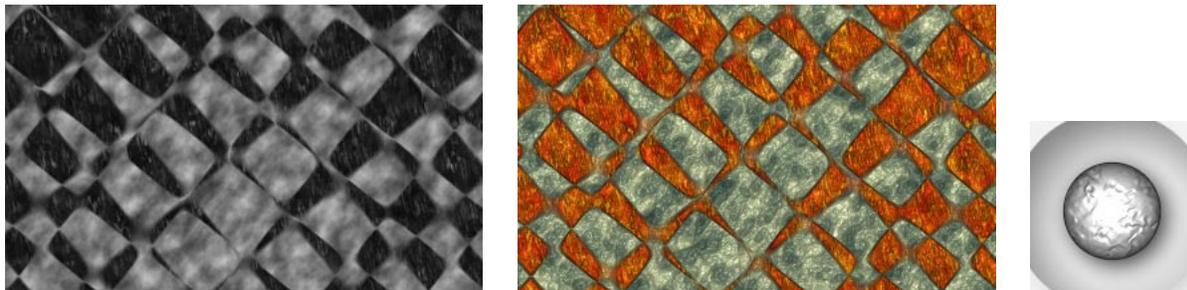
[ above ] the highlight just starts expanding until it covers the entire texture.

### how the lights work

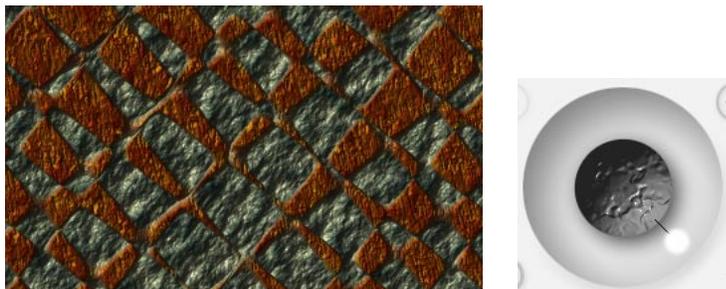
The lights use the bump channel to create highlights and shadows. That is to say... they fake it. Since the textures aren't really in 3D, the lights have to rely on the dark and light areas of the bump map to determine where a shadow should fall or a highlight should be placed.

Lighter shades of gray are viewed as peaks, as darker shades are viewed as valleys. As a light is moved around, highlights and shadows are created on one side of the peaks or another. If there is no variation in the shades of gray, say it's just one flat color, then no shadows or highlights appear. (If the light is directly above the flat surface you will get a highlight that covers most or all of the surface)

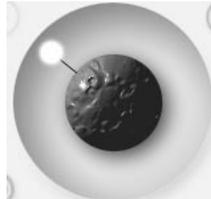
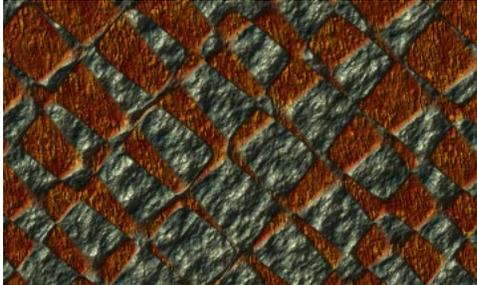
Let's take a look at this. We're going to use a single white light that we're going to move around a bit. Here's our texture with the light directly above it.



Notice that there aren't really any shadows or significant highlights. There's a few bright spots, but overall most of the texture is coming from the color channel, not the bump map. Take a look at the bump map and notice where the white areas, or 'peaks'. These areas will cast shadows in one direction or another and generate the highlights on their peaks.



Let's move the light over to the right horizon. This will create shadows to the left of the peaks.



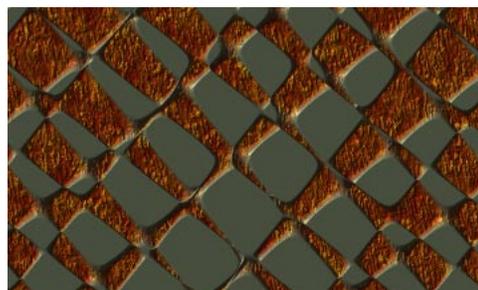
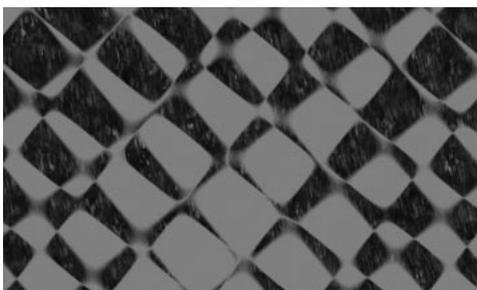
If we now move the light to the left horizon, we'll get just the opposite effect. Notice that the light areas still pick up highlights, but the shadows move around as if there were peaks and valleys.

Try experimenting a bit with the light and move it to different locations. You'll see the shadows move accordingly as you move the light around the sphere. Around the horizon you'll get severe shadows, towards the top you'll get almost no shadows, and in between you'll get softer shadows.

It's important to get familiar with this as it'll play an absolutely critical role in your textures.

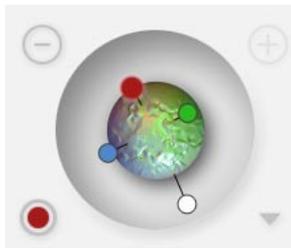
One last example, if we remove the noise from the gray areas of the bump map, we're left with a flat gray. This results in flatness in our texture as well. Notice that the gray stones are not perfectly smooth. Without any peaks and valleys, there's no way to determine where to put the shadows, so everything is just flat.

Even though there isn't any bump on the stones, the stones themselves are still raised up. There is still some contrast between the gray areas and the black areas. Anywhere there's contrast you'll see shading.



### adding or subtracting lights

You can easily add or delete lights from the Lighting Editor. Simply click on the Minus button to delete a selected light or click the Plus button to add a white light to editor.



You can have up to four lights at any one time. Once you have four lights created, the Add button will dim out, indicating you can't add anymore lights.

You can't have less than one light, so if there's only one light in the editor, the Delete button will be dimmed out.

### selecting lights and changing color

To select a light just click on the round colored circle. You will see a glow appear around it, indicating it's selected and the color chip in the lower left corner will take on the color of the selected light.



To edit the color of a light, just click on the light itself to select it. This will turn the color chip in the lower, left corner of the UI into the color of the that light.



Now click on the round color chip. This will pop open a normal color selector at which point you can change the color to anything you want.



### the light menu



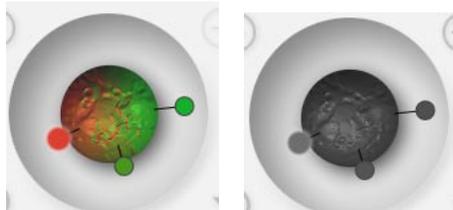
The drop down menu towards the bottom of the Lighting Editor gives you a few options. The most notable is the ability to load and save presets.



### reset lights

This just sets the lighting editor back to a single, white light.

### desaturate



This removes the colors from the light, leaving just a white light with the same luminance as the color that has now been subtracted.

### load/save presets

This allows you to save and load lighting information. It works like the other Preset managers that you will read about as you continue this manual.

### textured sphere

This lets you specify whether you want the lights previewed with a textured sphere (the normal setting) or a flat sphere with no bump map on it.



### using multiple lights

It's pretty easy to add multiple lights to a scene. However, why would you want multiple lights?

In the real world, multiple lights often exist and to recreate realistic textures you need to be able to simulate that. In addition, sometimes the lights in software are too basic.

### bounce the light

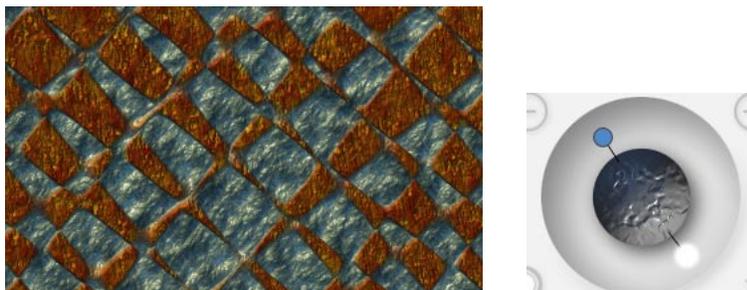
Light in the real world bounces. If you aim a white light at a blue wall, not only will the white light bounce but some of the blue will reflect as well. The lights in Texture Anarchy don't cause this secondary bounce, so sometimes multiple lights are needed to mimick what would happen with one real light.

Multiple lights are used all the time in theater and film to create backlights, fill lights to brighten up shadows, and all sorts of other effects. For example, when lighting someone for a TV interview you'll often use three lights.

### create ambience

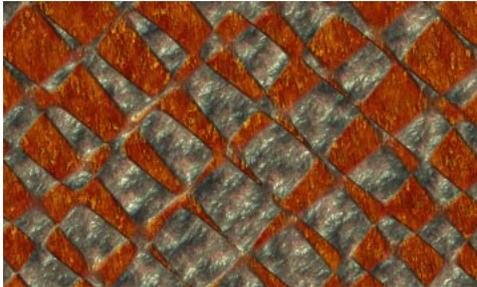
One way to use multiple lights in Texture Anarchy is to use a secondary light to create Ambient or fill lighting. They provide light in the shadows, giving them color where it usually would just be black.

Here's an example of using a blue ambient light:



Notice that the original dark tones in the image are now a blue-ish color. If we want to create a fill light like this, it helps to put it along the horizon and not make it as bright as the main light. If we put it above the lighting sphere it may affect the highlights as well as the shadows.

Sometimes this secondary light can emulate light coming from another source. In the first example, the blue shadows are kind of a random choice. Where is this blue light coming from?



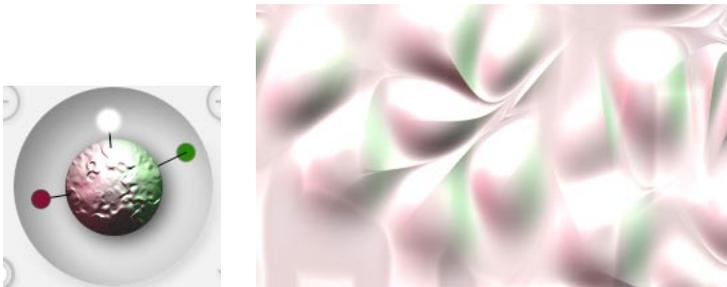
However if we examine this texture, it looks like lava or a similar molten texture below the rocks. Wouldn't it make sense to tint the shadows with a red color?

Definitely, so here's an example using a red fill light.

### subtlety

The light effects don't always have to be over top, as in the last example. In this example we've used three lights to create a nice glowy Christmas kind of feel.

We've used a bright white main light and a silvery texture to create the appearance of a silver surface. Since it's Christmas we want hints of red and green, which are easily added with a couple lights. Take a look:



With a couple lights we've added some nice highlights and a bit of variation without too much trouble. The Red and Green lights are much darker than the main light, but they add enough to the scene to accomplish what we want.

You can use lights in all sorts of ways to create very subtle effects or completely blown out, over the top color effects. Usually, two lights will be more than enough, but you never know when you'll need all four.



The really powerful aspect of TAE is that it is accessible to all Photoshop users, regardless of experience. Its a tool that lets you go as deep into the 'material mixing' process as you'd like.

A very technical term, we know. But 'material mixing' is the best, simple way explanation of what goes on in Texture Anarchy. You have one room (or level) for using presets and fast tools. You have a second room/level to mix and combine the layers of fractal noise, which you create in the third and final room.

The deeper lying concepts may be a bit tricky to grasp if you are new to fractal noise, grey maps, etc. It's all great information to know. But, if you don't want to go there, your texture output can be based purely on presets and mutations.

### room one : the main room

The easiest way to use TAE is working in the Main Room. You can use Mutation tools to randomly create textures. Or, load in already-made textures from a Preset Manager.

With these starting points, you can create variations using the Transform controls and Lighting Editor. You can also use Blend modes, Opacity, and Bump options to control how your texture interacts with the Photoshop layer you've applied the filter to.

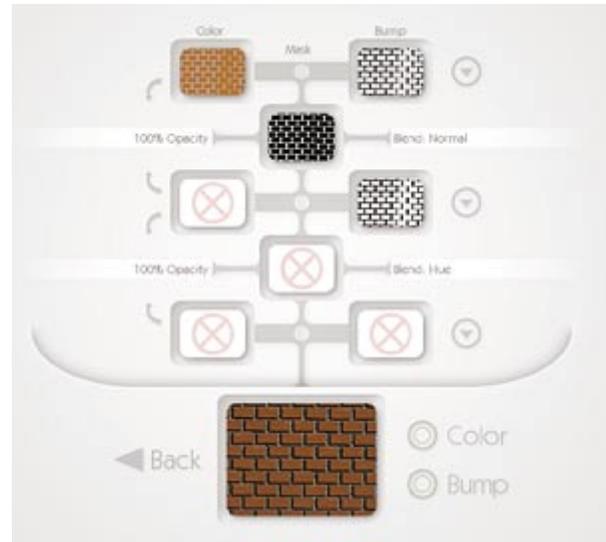
When you're ready to get deeper into TAE, and take the reins of your texture, then pick any of the components making up your texture. Click on the Color, Bump or Alpha Well to edit that material.

## section five : overview of rooms



[ left ] the Main Room

[ right ] the Layer Editor Room



## room two : the layer editor

The Layer Editor Room is where you begin to edit materials and construct your own textures.

There are three possible layers of color gradients, transparency masks, and bump maps. These layers stack and interact similar to the behavior of Photoshop layers. This allows you to combine and mix them into complex, final textures.

If we look at 'material mixing' our texture like baking a cake, then this is where we add the flour, eggs, and other basic ingredients that make up the dough.

Each texture well in the Layer Editor Room is constructed from up to three base noise types that you create in the Deep Noise Room.

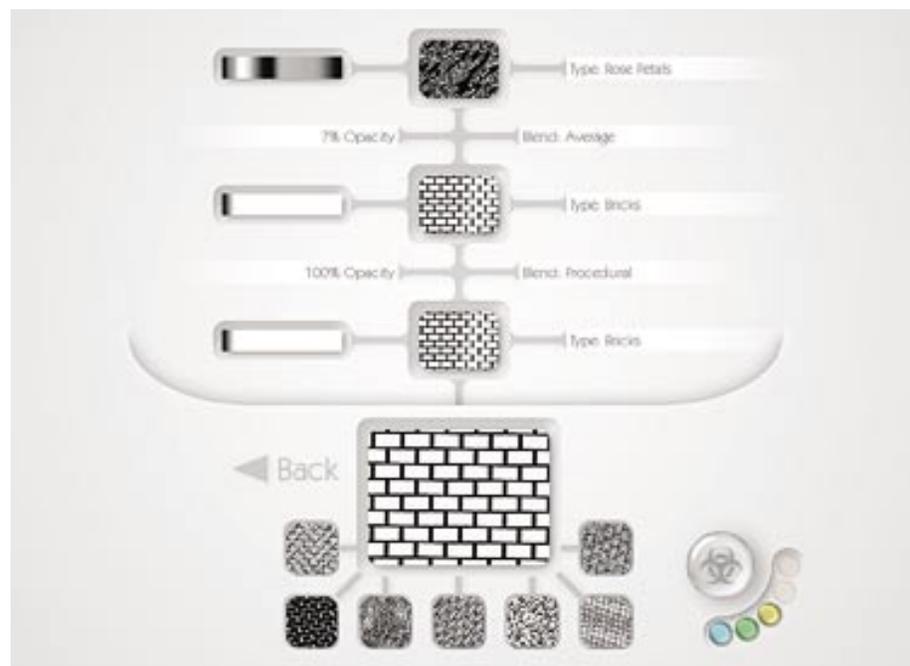


## room three : the deep noise editor

The Deep Noise Room is truly the heart of Texture Anarchy. Here, you can explicitly edit each texture well.

With 38 different types of base materials, or Noises, the combinations you can create are endless. Scale, Rotate, and Pan textures, use textures to distort other textures, or just blend them together. When you want to add some color, you have the Gradient Editor, a full featured gradient tool.

Continuing with the cake analogy, these noise types are the ingredients for the materials that make up your cake.





## the undo command

While each room is certainly unique, there are some features and functions that are common to all three rooms. The Undo Command is an important one. Apple/Control-Z will undo the last action. Whew! This works with MOST but not ALL functions.

In the Main Room, if you accidentally click a Mutator Well, that well's texture will take over the Main Well. Use Apple/Control-Z to undo the command and get back to the previous Main Well Texture. Or, if you use the Scale Tool to stretch out a texture in a material well, then decide you don't like the transformation, you can undo the scaling.

## using presets

Of course, if you want to experiment without destroying the texture you currently have, just save it as a preset. Create a 'Temp' category in the Preset Manager, and save all your 'in-progress' textures there.

There is only ONE level of undo, so be careful about making multiple changes. If you click on a few different Mutation Wells, you can only go back one step, so you won't get back to the original texture.

[go to page xx to learn about the many Preset Managers available to you](#)





## if you apply the filter

Once you Apply your texture to the Photoshop file, TAE will remember your settings and setup the next time you launch the filter.

## if you don't apply

If you do not apply the texture you've been working on, and cancel out of TAE instead of applying to the canvas, then TAE will not remember the setup you were working on. All the work you've done since opening TAE will be lost.

Of course, sometimes you will work on a texture for a while, get stopped in the middle of the worksession, and want to wait around for a render of the file. There are two easy workarounds. One is to save your setup as a Preset. Alternately, you can choose Options> Fast Render before applying the file, which sets down a 'rougher' but quicker render of the texture.

## if you reapply

If you apply Texture Anarchy a second time, to a different document, you will generate the same texture, but retrofitted to fit your current document. This is really cool for workflow. Texture Anarchy can take a while to render so it's helpful to experiment with a low res version, then apply your filter to the high res image when you've finalized your texture.

For instance, work with a low-res version of your image, like 400x550 . When you've mixed your texture and tested it out at small scale, then create a high-res file, like 2400x3300 (8x11 at 300 dpi) for the final render.



The Main Room is where you first construct your texture.

Here, all efforts focus on the texture in the Main Well. For this, the Main Room has the following controls: Mutation Wells, Mutation Sliders, the Mutation Menu, Layer Options, and the Lighting Editor. It also provides the access point to the next editing level through Color, Alpha, and Bump Wells.

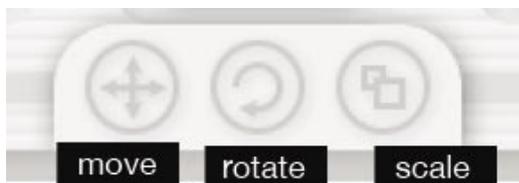
The sliders and wells here can be considered 'global' controls. These controls don't perform detailed adjustments. Instead, they make major visual shifts to the texture.

## the main well

The largest square displays the texture that you'll be creating. This is your Main Well; basically, the staging area. It shows the active texture.

## transform tools

When you hover over the well, you'll see a toolset popup. These controls allow you to Move, Rotate, or Scale the texture. Drag over the appropriate tool, not the well itself, to make this happen.

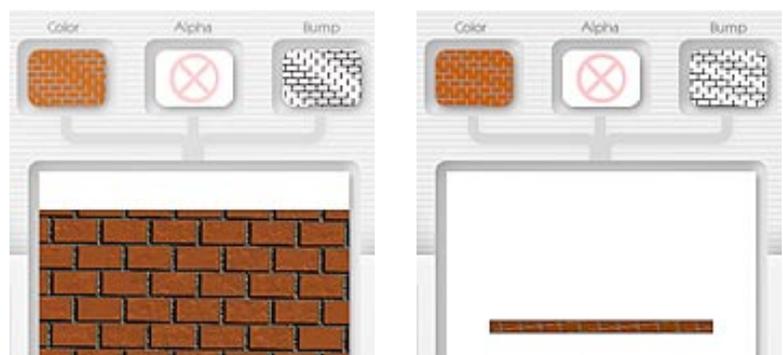


These are pretty standard editing functions, and one tool is absent from this set, so we'll leave the longer explanation of the Transform tools to a later chapter.

## preview size

The Main Well's preview shows the size of your Photoshop file as much as possible. The white space around the Main Well isn't part of your texture. It's just a blank preview space.

- [ right ] a narrow horizontal file, about 200x40 pixels
- [ left ] a 320x240 pixel file





## mutation sliders

Mutation Sliders set how much the mutations vary from the original Main Well texture. The higher you click along the rung of sliders, the greater and more random the variation. So, red = major mutation, blue = slight variation.

If a Mutation Well has been 'frozen' via Alt-clicking, that well will not be affected by the Mutation Sliders.

[ mutation sliders run from high (red) to low (blue) in the extremeness of the mutation ]



## mutation wells

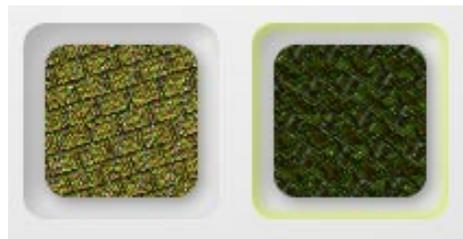
The U-shape of nine small squares that encircle the Main Well are Mutation Wells. These are mutations of the Main Well texture. Mutations are simply variations of the main texture, using similar algorithms, colors, and transformations.

How closely related the mutated textures are to the original texture depends upon the settings of the Mutation Sliders (see next page).

### alt-click to lock

You can Option-click [Alt-click] on any Mutation Well to keep it from mutating. Pull the sheep away from the flock, so to speak. When you've 'locked' a well, it will have a faint yellow outline around it. To release the well, Option[Alt]-click again.

Locking a well is great for temporarily storing textures on the fly that you may want to use, but you're not ready to make the commitment to. You can visually preview multiple textures next to each other.



[ left ] active mutation well  
[ right ] locked mutation well

### click the well

When you click a Mutation Well, two things happen. One, the texture in that well replaces the texture in the Main Well. Two, the Mutation Wells generate new textures based on what's now in the Main Well.

As the mutations are increasingly different from the original starting point, the resulting textures have more diverse materials and material properties.

## section six : [ tae ] : the main room



Pictured here are the resulting mutations for the same original texture. The textures that result at a low mutation are pretty similar.

More accurately stated, the component materials that make up these textures are similar, and these components have similar properties. For instance, the color gradients have similar colors. And the underlying fractal noise is generated from the same noise types.



- [ left top ] low mutations
- [ left middle ] medium mutations
- [ left bottom ] high mutations



- [ right top ] original texture
- [ right second mutation
- [ right bottom ] highest mutation



If you drag inside a Mutation Well, the texture will shift and drag within the well. You are revealing a different area of the seamless algorithmic pattern. Remember, these textures can go on infinitely – there is no beginning or end.



hmmmm...

What materials are we referring to? And what properties do they have? These are crucial parts of going deeper into TAE, so we'll introduce them shortly via the component wells on page XX. Then we can show you the cool stuff – flowcharts! With pictures!

## mutation menu

Well, ok, first we need to chat about the Mutation Menu. That's the circular shape with a funky symbol to the left of the Mutation Slider. Click on this to bring up a menu of choices regarding which properties of the texture get mutated with every click.



This allows you to be precise with the characteristics you tweak, which is great if you're really happy with certain aspects of the texture (like color and lighting) but want to make adjustments to other aspects (like scale and gradient). There are also some rules you should be aware of regarding what you turn on and off.

## what does the mutation menu do?

The Mutation Menu allows you to control what gets mutated when you generate mutations. It looks like it makes no sense at all, and therefore is the one UI element that really needs explaining.

So how does it work? There are three main sections: Channels, Properties, and Transform.

Specifies the channel that will be affected. Any mutation that occurs, will only do so in the selected channel(s).		Selects which properties will be mutated. Something has to be selected here and in one of the other categories for any mutation to occur.
Sets which transforms will be mutated.		



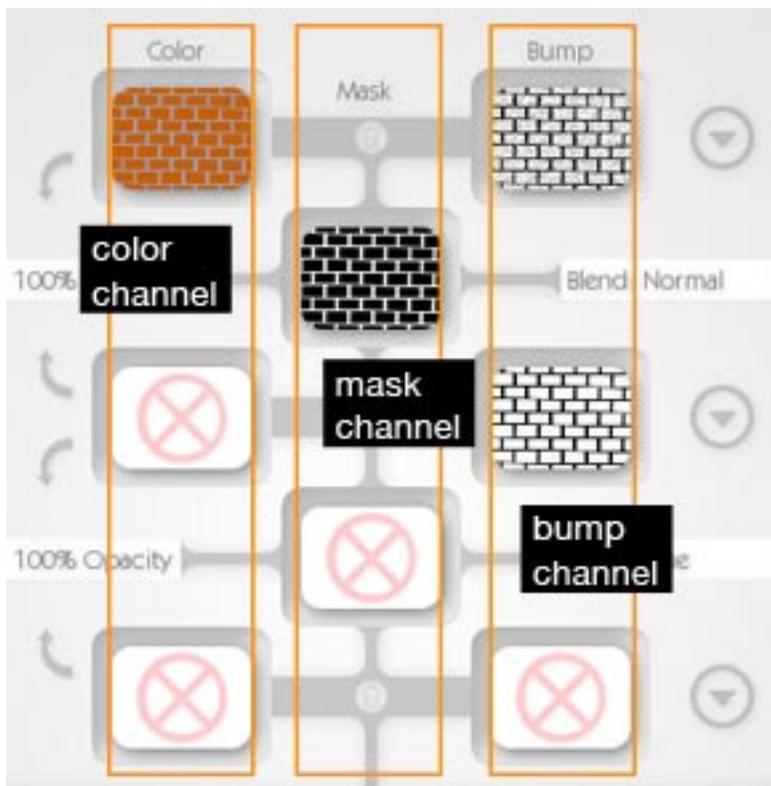
## mutation menu : channels

The top four selections are for your channels and lights. At least one item needs to be selected here, because you need to tell the Mutator what to work on.

If nothing is selected, it's a bit like giving the Mutator a key and saying 'go through one of those four doors'. Except, the key doesn't work on any of the doors. The Mutator can't get in to start rearranging things.

### what are channels?

We are referring to the Color, Bump, and Alpha/Mask channels, which you should be familiar with by now. The Light is the Lighting Editor and is not related to the channels. You can have one, all, or a combination of these selected at any one time.



The Color and Bump channel in the Main Room are related to the Color and Bump channels in the Layer Editor. Anything you do in the Layer Editor will be reflected back out in the Main Room.

This is not true for the Alpha/Mask channel. Hence the different names.

The Mask Channel controls how the layers in the Layer Editor blend together.

The Alpha Channel controls transparency when you get back into Photoshop. If you want your layer IN PHOTOSHOP to have areas of transparency, then the Alpha Channel is what you want to deal with.

Mask and Alpha Channels have nothing to do with each other, except that both are mutated when Alpha is selected in the Mutation Menu. And then only if they are turned on. If the Alpha Channel is turned off or if no mask is turned on in the Layer Room neither will be mutated.

### channels need to be turned on

This is true for any channel. If you have the Bump or Color channel well turned off it will not be mutated. This goes for the Layer Room as well, unless Layers is selected in the second section.



[ the Bump and Alpha channel are turned off here ]

### mutation menu : properties

In the Properties section, you select what properties of the texture you want mutated. Again, something has to be selected here. If not, to use our earlier example, you've let the Mutator into the rooms, but everything is bolted down so it can't change anything. You need to tell the Mutator what components of the texture you want to change.

### gradient

This changes the gradients for all channels specified in the first section. Remember that the bump maps use gradients (grayscale) as well, so selecting this and selecting Bump will modify the bump maps. However, this is most useful when used with the Color channel. The combination of Gradient by itself in the Second Section and Color in the First will result in no change to the texture except color.



Here's an example of some of the results you might get with that. The image on the far left is the original.

One potentially unexpected result of selecting this and selecting a transform in the Third Section is that Layers will be transformed as if you had Layers selected as well in the Second Section. Since you can't transform a gradient, we assume you want something transformed if there is a selection in the Third Section... that something is the layers.



## noise

Noise changes the noise types used for all the channels specified. This can have almost no effect if you don't change the Color and Bump channels... or this can have a fairly random effect as mutating noises will generally result in widely varying looks to the textures.



Here's some examples of changing Color and Bump channels simultaneously. The original is on the far left.

Keep in mind that we are changing the Color Channel, not the color itself (which would be the gradient). You'll see some slight shifts in color, but all the variations are using the gradient that was in the original.

## layers

This is by far the most limited control by itself. It can only turn layers on and off in the Layer Room and change blend modes.

However, Layers is also the one control that may be most likely to get you good variations of your texture. By turning on the transform (scale, rotation, position) controls in the Third Section, this will often give you a good range of usable variations.

Layers will only use the noise types and gradients you've already supplied. You don't end up with crazy noise types or gradients with a thousand points. It can be much more controllable and result in better results.



[ top ] Layers before  
[ bottom ] Layers after



## mutation menu : transform

This section just allows you to turn on the Transform controls. It is NOT required that one of these be selected. If they are not selected, then it will essentially lock the textures into place.

If these are turned on the mutator can rotate, scale, or move the noise or layers. This will dramatically increase the variations you can get and when used in conjunction with the Layer property can produce some excellent results.

## mutation menu : select all/none

Well, you can either have your cake, or eat it. Use Select All to mutate every possible crevice of your texture. Use Select None to quickly turn all the Mutate controls off. Please see our warning about what needs to be selected in the Channel and Properties sections.

## argh! i still don't understand how to combine them!

We figured it would come to that. The Mutation Menu is somewhat confusing exactly how to combine its options to actually get something to happen, but, hey, that's why we're spending all this time writing this nifty manual.

So here's a few combos that will hopefully help explain things and give you some useful Mutation setups. And, you can order them off of the regular sushi menu.

### combo - 1

Only changes the color of the textures. You are only changing the gradients in the Color Channel. This results in textures that are exactly the same except for the colors.



Mutate Color	✓
Mutate Alpha	
Mutate Bump	
Mutate Lights	
Mutate Gradients	✓
Mutate Noises	
Mutate Layers	
Mutate Scale	
Mutate Penning	
Mutate Rotation	



### combo- 2

Changes all the noise types, but keeps the colors the same. You are changing the noise type in all the channels, but you aren't changing the gradients in any of them. This produces mutations that are similar in color to the original texture but can look significantly different. We have also turned on Scale in the Transform section, which allows the noise in any channel to be scaled randomly, producing a wider range of mutations.

Again, you are changing the noise type in the Color Channel, but not the color itself, since Gradient is not checked off. This results in a rearrangement of the color texture, but the colors themselves stay the same.



Mutate Color	<input checked="" type="checkbox"/>
Mutate Alpha	<input checked="" type="checkbox"/>
Mutate Bump	<input checked="" type="checkbox"/>
Mutate Lights	<input type="checkbox"/>
Mutate Gradients	<input type="checkbox"/>
Mutate Noises	<input checked="" type="checkbox"/>
Mutate Layers	<input type="checkbox"/>
Mutate Scale	<input checked="" type="checkbox"/>
Mutate Panning	<input type="checkbox"/>
Mutate Rotation	<input type="checkbox"/>

### combo - 3

This only changes the Bump Channel and it changes everything about it. The noise types, the gradients, layers... everything. This keeps the entire Color and Alpha Channel unchanged. In this case, we like the texture in the Color Channel and don't want to change it all.



Mutate Color	<input type="checkbox"/>
Mutate Alpha	<input type="checkbox"/>
Mutate Bump	<input checked="" type="checkbox"/>
Mutate Lights	<input type="checkbox"/>
Mutate Gradients	<input checked="" type="checkbox"/>
Mutate Noises	<input checked="" type="checkbox"/>
Mutate Layers	<input checked="" type="checkbox"/>
Mutate Scale	<input checked="" type="checkbox"/>
Mutate Panning	<input checked="" type="checkbox"/>
Mutate Rotation	<input checked="" type="checkbox"/>

### in conclusion

One aspect that may still need to be cleared up is what the first section of controls refers to by Channels. 'Color' doesn't refer to the color of our texture. 'Bump' only refers to the Channel, not the final noise that's used for a bump map.

It's also important to realize that those checkboxes only ALLOW those sections to be worked on. Having the component checked doesn't NECESSARILY cause its properties to change. It's simply possible.

Hopefully that helped. Happy Mutating!



## three component wells

Now...on to the fun stuff! There are three component wells located above the Main Well in the Main Room. These are Color, Alpha and Bump. Kind of the ingredients to your sandwich.

These wells are fully and deeply editable in the Layer Editor Room. In fact, that's the whole fun of Texture Anarchy! After all, who always wants grape jelly and peanut butter on rye, when you can kick out the PB, choose apricot jam, and throw in some pickles.

## alt-click to toggle

You can turn off/on each of these wells by Alt-clicking on the appropriate well. The Main Well will display only the 'on' components.

When you mutate the texture, the Mutator Wells will display only the 'on' components. So if Color and Alpha is turned off, then you'll only see the Bump Well mutated.

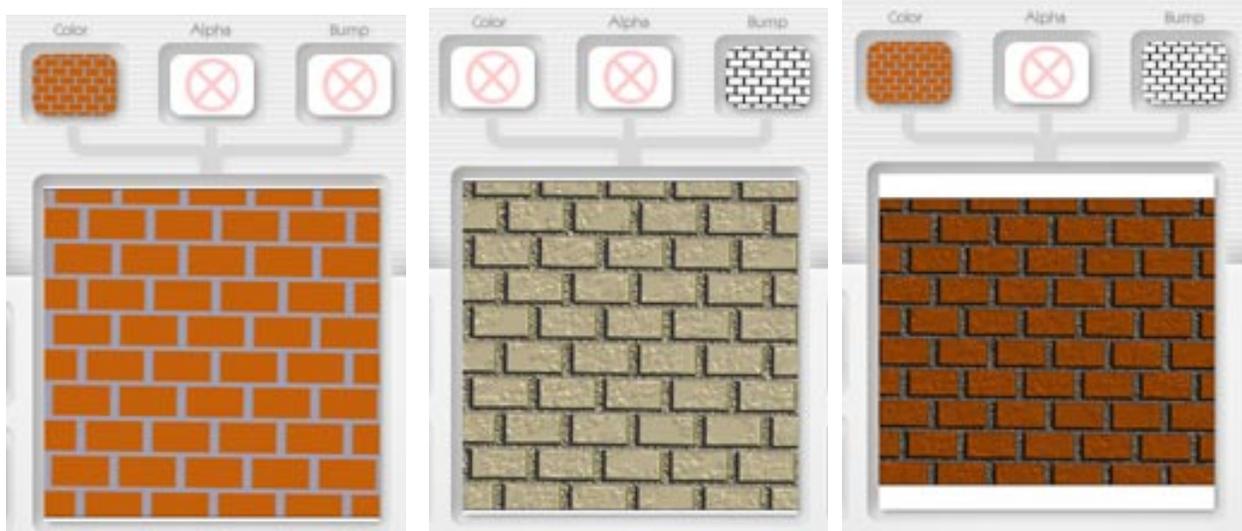
When you Alt-click again, the texture will reappear in the component wells, fully intact.

## color well

Color is the gradient of hues that you set down. The Color is constructed of a Color Gradient and up to three Noise types.

The Color Gradient and Noise Types are edited in the Deep Noise Room. A layering of textures that make up the final color are edited in the Layer Editor Room.

When the Color is set over the Bump component, or 'bump map', its colors map themselves to the latter's darks and lights. This simulates an appearance of depth, giving a 3D quality to the texture you're creating.



[ left ] only Color Well on [ middle ] only Bump Well on [ right ] both wells turned on

## bump well

As stated already, the Bump Well is what gives the Color Well its three-dimensional quality. You are using a grayscale texture as a 'bump map'.

### what's a bump map?

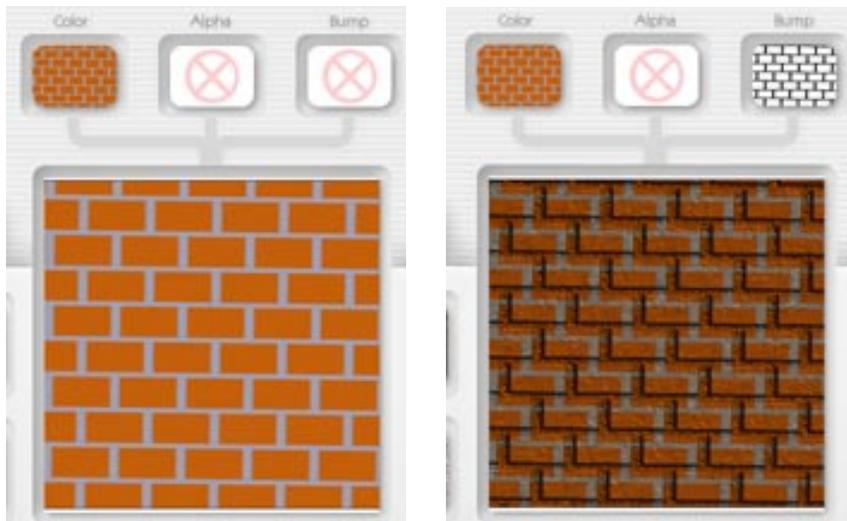
Classic compositing, folks. A 'bump map' is a method of creating the appearance of texture or 3D relief on a surface without modifying the underlying surface. You apply a grayscale image (our Bump) to another image (our Color).

Bump maps are also called 'gray maps', for obvious reasons. We have a whole section on bump mapping in the Lighting Editor section. If you're not familiar, please jump to the front of the class and read that section! It's a very important concept for working with the Texture Anarchy suite. And it's really good information for any artist to know.

### grayscale values

The grayscale value at every pixel of the Bump is interpreted by every corresponding pixel on the Color. Lighter pixels on the Bump are interpreted to increase the impression of relief. Darker pixels have less effect.

So, white makes peaks, or the highest ‘bumps’. Black makes valleys, or a shallow relief. The range of grays inbetween maps accordingly; light gray is higher, dark gray is shallower. At 50% gray (neutral gray), there is no relief.



[ left ] Bump map lines up with color gradient to make convincing bricks

[ right ] with Bump map shifted, the image isn't 3D anymore

## background color

There are some behaviors of bump maps inside TAE to keep in mind. One is the color(s) of the layer that TAE is applied to, if you happen to have only the Bump Well turned on.

You may never need to preview or work without Color and Alpha, and if that's the case, well, you'll never put these paragraphs to good use. So be it. But, if you're creating a grayscale image for use as a layer mask, alpha channel, or displacement map, it's often quicker to just work with the Bump Well. And, therefore, good to know about any unexpected (though explainable) behavior.

Any time you create a bump map, you're creating artificial shadows. There's no way to create shadows on pure black, without other tones to contrast. So, if you apply TAE to a black layer, then turn off the Color and Alpha Wells, you'll see a pure black image where the Bump Well component should appear.

## section six : [ tae ] : the main room

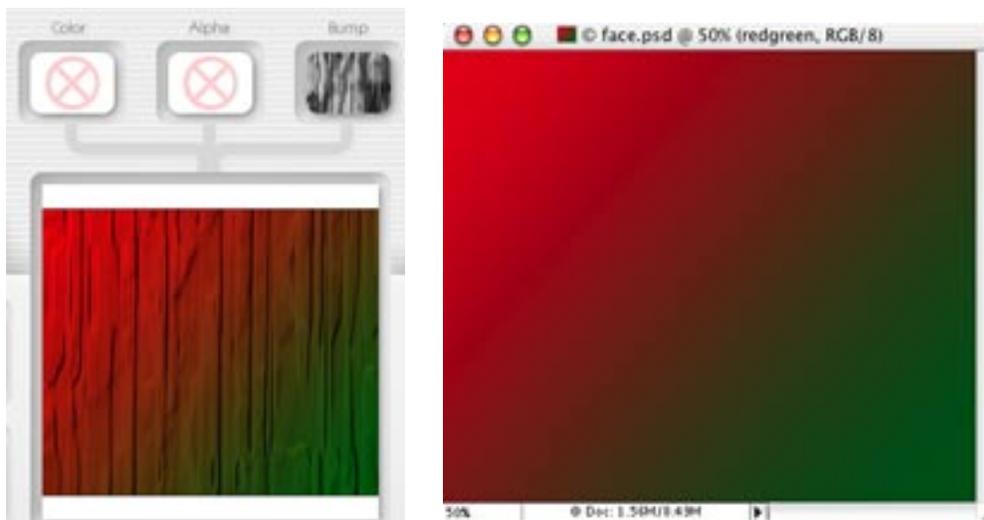


With no Color turned on, the Bump takes the coloration of the Photoshop layer it's applied to. So, if your layer is a red-green gradient, you'll see red-green as the backdrop hues for the TAE texture. If your layer is an image, it will show the image through the Bump. Transparency in the layer will ignore the Bump and remain transparent.

The color blending is affected by layer options like Blend mode and Opacity level.



[ left ] the texture [ middle ] applied to a black layer, Bump only on  
[ right ] applied to an image with transparency, only Bump only on



[ left ] TAE applied to a red-green layer  
[ right ] Bump only on the red-green gradient layer

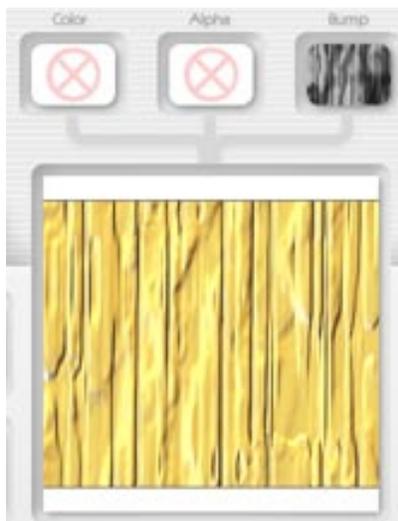


## lighting editor : overview

A really important aspect of the Bump Well is that its texture is greatly defined by another feature of TAE. That is the Lighting Editor, which is discussed in detail in its very own section of this manual.

The Lighting Editor actually tells the texture where its highs and lows are. Its lights – up to four of them, in a spectrum of possible colors – create shadows and highlights on the Main Well texture. The bump has no real effect on the texture without the lighting editor.

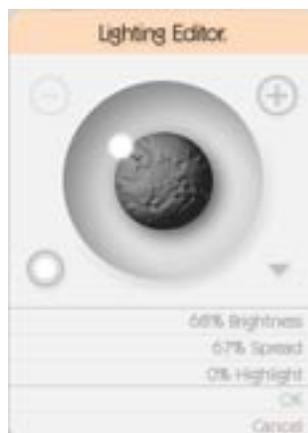
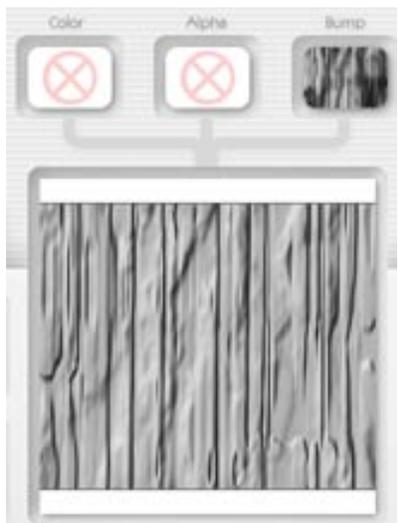
So, read the Lighting Editor section, damnit...!



[ top ] white layer, yellow light  
[ bottom ] white layer, white light

Only the Bump Well, essentially a gray-scale image, is turned on for this texture applied to a white layer. [ top ]

So, why isn't the texture applying itself to a white hue? Well, it is, but the Lighting Editor shows us that we have bright yellow lights applied, which greatly affects the Bump map appearance.



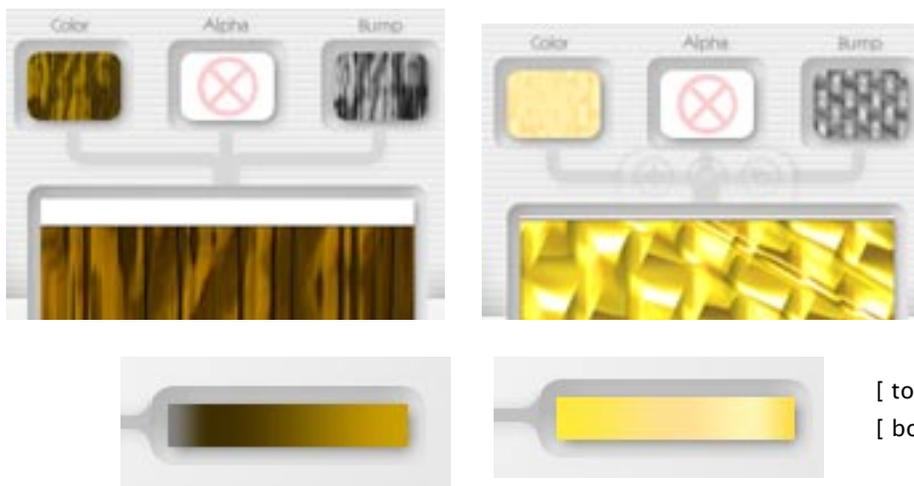
Back on page xx, you'll notice the brick texture has a tannish hue when only the Bump Well is on, even though it's a grayscale image on a white background. That's because a set of goldish lights are shining on it.

Once we've adjusted the Lighting Editor so that only one dim white light shines on our Bump Well, the underlying white of the Photoshop file comes through. [ bottom ]



### tip :: use the image twice

A common strategy in compositing textures, is to use a single image as both as a bump map and the color image (called a texture map). This creates a realistic effect of both color and texture. We've use this strategy quite a bit to make our presets...and we'll look at this concept more in the Layer Editor Room section, page xx.



[ top ] using one texture twice  
[ bottom ] the gradient applied

If you look at these Presets, you'll see that in both component wells, the Color and Bump are the same grayscale file. In the Layer Editor Room, you can Control-click-drag [right click-drag] to copy a texture from one well to another.

The difference between wells is that the Color Well has a gradient applied. To find that color gradient, you'll need to go to the Deep Noise Room. The fun doesn't stop here!

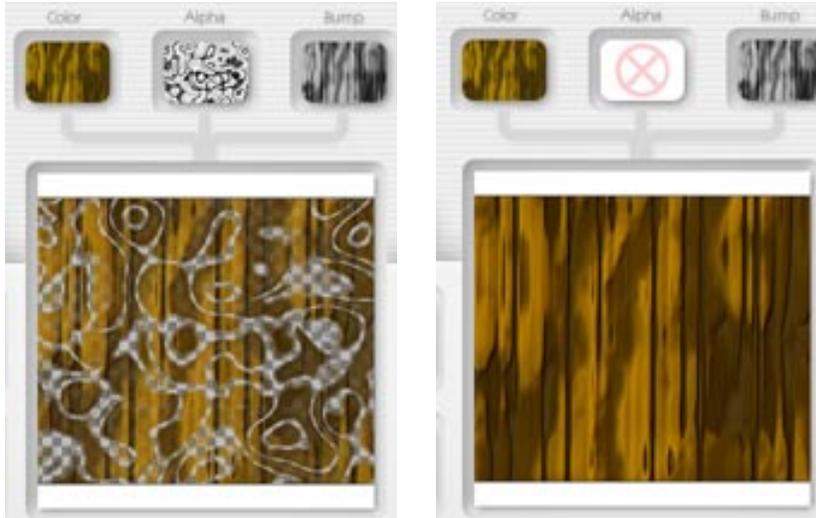
## alpha well

The Alpha Well is quite different from the Color Well and Bump Well.

'Alpha channels' traditionally save information such as transparency and color. But, the Alpha component here in acts more like a Photoshop layer mask.

The Alpha Well in TAE, and a layer mask in Photoshop, is a grayscale image that can obscure a selected part of the image its applied to. So, what's black will be hidden, what's white will show fully, and gray shades will show in various levels of transparency.

## section six : [ tae ] : the main room



[ left ] Alpha Well turned on  
[ right ] Alpha Well turned off

Basically, black = transparent, white = opaque, neutral gray = semi-transparent, and all the shades of gray fall in between.

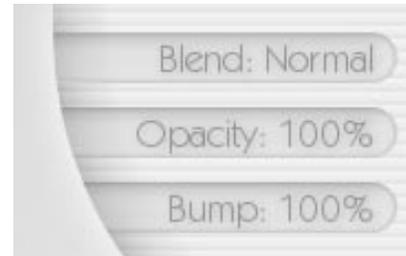
If we look at our rotten wood texture applied to an image, with the Alpha turned on, you can see that (left) the black areas are completely transparent – that’s the checkerboard grid – and the dark grays are semi-transparent, with the checkerboard partially obscured. The gradient for the texture (bottom) has a full range of grayscale values. You’ll find these materials in the Deep Noise Room.

To edit the Alpha Well, you skip directly to the Deep Noise Room. No middle step of the Layer Editor Room, as with the Color And Bump wells. Please see the Deep Noise Room section on page xx for more info.



## the three layer options

At top left of the Main Room are controls for Blend, Opacity, and Bump. These global controls affect not the texture itself, but how the texture reacts to the Photoshop layer it's sitting on.



Blend mode, Opacity level, and Bump settings apply only to the layer that TAE is applied to. You will not see or interact with any layers that sit beneath the TAE layer. Of course, once you've completed your texture and are back in Photoshop itself, you can always adjust similar settings in the Layers palette.

## blend layer option

Blend Layer blends the texture with the Photoshop layer beneath. If you're at all familiar with the layer modes of Photoshop, this blend mode function is just as easy and fun to use.

Click and hold to pop up a menu of the options. Or, drag your cursor horizontally over the Blend field to scroll the menu. The Blend you choose blends between the texture you're creating and any image that may already be on the layer that Texture Anarchy is applied to.

A blend mode determines how the texture's pixels blend with the Photoshop layer's underlying pixels. You can create a variety of special effects using the Blend option.

please refer to appendix 'a' at the end of this manual for an explanation of each blend mode

Blend Menu.	
Normal	Procedural
On Top	Procedural Inv.
Behind	Extrapolate
Replace	Extrapolate Inv.
Dissolve	Difference
Multiply	Difference Inv.
Multiply Norm.	Similarity
Screen	Similarity Inv.
Screen Norm.	Hue ✓
Overlay	Saturation
Lighten	Brightness
Darken	Color
Dodge	
Burn	
Soft Light	

### the default mode

Usually, the Blend mode defaults to Replace. This replaces the original image completely with the rendered effect. If Blend Mode is not set to Replace, the resulting effect will composite with the original image, recalculating pixels to result in new colors or levels of transparency. If your layer does have an image on it already, then you will generally see an interaction between the texture and the existing graphic its been applied to.

### unexpected results

If your Photoshop layer is a solid color, you may get unexpected results depending upon what Blend mode you've selected.

If your layer is white, your texture may 'disappear' and leave you with a white field in the preview area when applying, for instance, Screen. If your layer is black, it will show as black against certain Blend modes like Multiply.

### calculate transparency

Transparent pixels in your layer may calculate differently than filled pixels, which is good to keep in mind if you have Photoshop's transparency grid (a checkerboard of pixels) hidden. You can turn that option on/off through Photoshop> Preferences> Transparency & Gamut.

All the Texture Anarchy filters have their own 'checkerboard' preview that is independent from this Photoshop setting.



Blend: Normal



Blend: Saturation



## opacity layer option

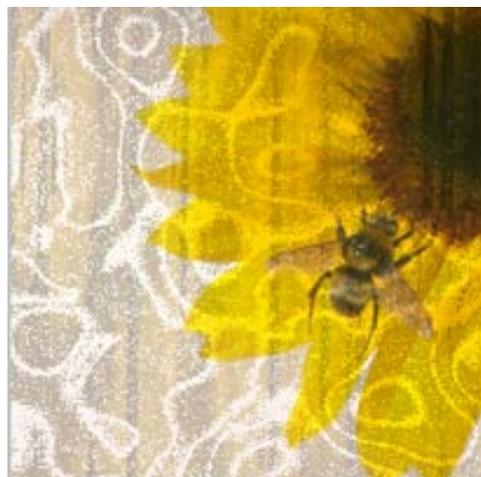
This adjusts the opacity of your texture in relationship to the layer it's sitting on. It uses the standard practice of 100% = opaque, 0% = transparent, 50% = semi-transparent. It's set to 100% by default.



Click and hold to pop up a numeric input area. Input your percentage, then accept with OK or the Enter key. Alternately, drag your cursor horizontally over the Opacity field to scroll its percentages.

If you have a solid-colored layer, like yellow, then that color will show through based on the percentage of transparency that you've set. If you've applied TAE over an image, then you'll see that image show through.

Depending upon what Blend mode you've set, the Opacity may look different – or cooler! – than expected. In particular, lowering Opacity can give you a more subtle or sophisticated version of your desired effect.



[ left ] Blend = Dissolve, Opacity = 100 [ right ] Blend = Dissolve, Opacity = 30



[ left ] Blend = Extrapolate, Opacity = 100 [ right ] Blend = Extrapolate, Opacity = 50

## bump control

This adjusts the level of contrast in the Bump Well, to give a more or less three dimensional feel to the texture. It's set to 100% contrast initially.

Note: This setting does not work with your Photoshop layer, as do the Blend and Opacity options discussed earlier.

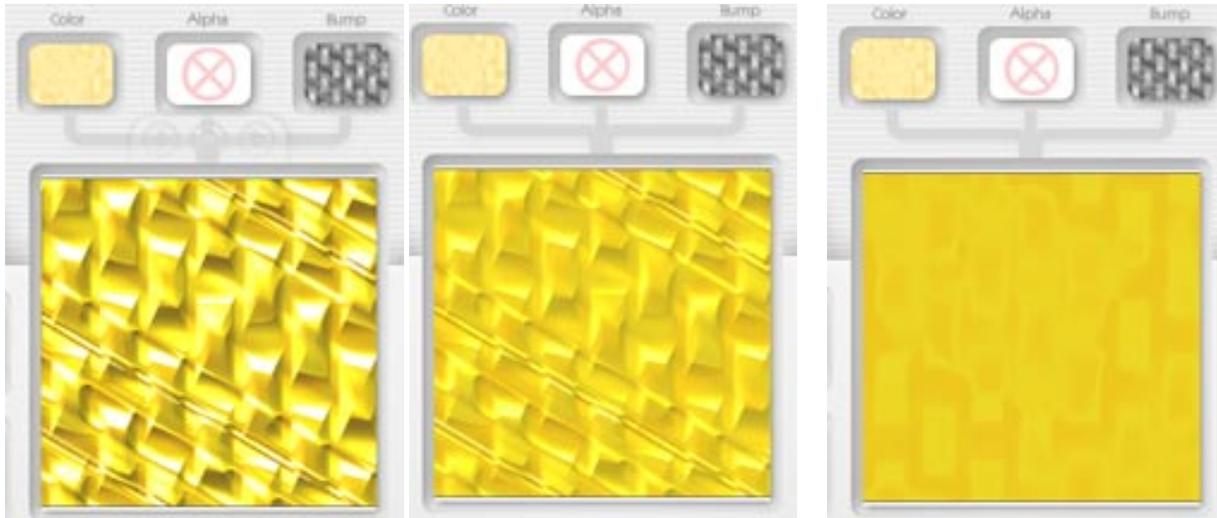
Click and hold to pop up a numeric input area. Input your percentage, then accept with OK or the Enter key. Alternately, drag your cursor horizontally over the Bump field to scroll its percentages.

## highs and lows

If you set Bump to a high percentage, you will get the maximum amount of contrast or difference between lights and darks. As you reduce the Bump, the 'peaks' of the texture get lower and the 'valleys' aren't as deep. You lose your mid-tone values, because you're limiting the tonal range in your texture.

At 0, the values are even, the bump is flat, and there's no displacement whatsoever against the underlying texture. You've effectively turned off the Bump, even though it's well is still turned on.

## section six : [ tae ] : the main room



With different Bump Layer settings applied to this Gold Brick preset, the Main Well texture can take on completely different looks.

[ left ] when Bump=100, the texture resembles its preset name, Gold Bricks

[ middle ] when Bump=30, it looks more like a sheet of crumpled, shiny paper

[ right ] when Bump=0, the texture could be satin draped over sharp rectilinear objects



Most of our presets are created with the default Bump of 100, but some are best constructed with less relief.

[ left ] the preset 'Barely Cracked Paint' looks convincing with Bump=25

[ right ] crank Bump to 100, and you have gesso'ed plaster, instead of peeling house paint

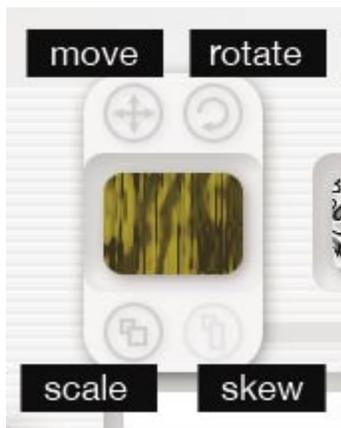
## think in gray

Your lights and mid-tones and darks display themselves as colors. But they're really based on a grayscale image that lies beneath (the Bump Well texture) and are strongly affected by the lighting that's shining on your texture (from the Lighting Editor). So while your texture may be made of pale pink, mustard yellow, and deep purple, it's always best to define them in your mind along a grayscale range of white to mid-grey to black.

[more about the Bump Well on page xx, and the Lighting Editor on page xx](#)

## transform controls

A powerful way to construct your texture is to scale, rotate, skew, or shift it. You can transform the Main, Color, Alpha, Bump wells. The Main Well updates its preview accordingly.



There are two ways to access the Transform controls: the toolbox or keyboard commands.

Hover over any of the wells (except the Mutation Wells) to activate the popup box. You will find the Move, Rotate, and Scale tools (the fourth, Skew, is grayed out). Key commands are Shift for scale, Apple [Mac]/Control [PC] for Rotate.

You can also drag and drop textures between the Color, Alpha, and Bump well sby using the Control key [Mac]/right-click [PC].

[please see the Layer Editor Room for a full discussion of transformation and what it does for you](#)

## preset manager and presets

Presets are premade textures that you can use as a quick starting point. Sort of the Bisquick for your biscuits.

[see the Preset section for more information](#)



Now, bricks aren't exactly a SEXY texture, but our Big Brick preset is a terrifically straightforward example of how the Layer Editor Room works.

The Layer Editor Room is where you mix together grayscale materials, some with color gradients applied, that form your main texture. These grayscale materials are actually Fractal Noise types that you access in the Deep Noise Room.

In this section, we're going to use our plain brick texture to learn about the stacking order of the Layer Editor Room's layer. Next, we'll use a muddy brick texture to look at how masks fit into the equation. Finally we'll look at a few more colorful textures to get the full impact of color gradients, layer blend modes, opacity settings, and the transform tools.

### entering the second level

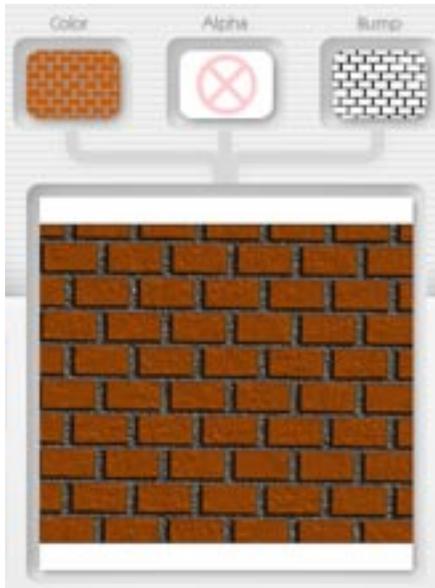
The screenshots here show two different views of our Big Brick texture. If you've read earlier parts of this manual, you've already seen the screenshot at left. That shows the Main Well, which holds the texture you're creating, and its three component parts: Color, Bump, and Alpha (turned off here).

At right is a more detailed breakdown of the Main Well texture. What we're looking at is essentially a flowchart of the materials that make up the components that make up the texture. Er... follow that? To view and edit this powerful functionality, we've entered TAE's second-level room, the Layer Editor Room.

### the access point

We accessed this room by clicking inside either the Color Well or the Bump Well. Both wells take you to exactly the same area, so you can edit them side by side. We'll say this again, louder: BOTH WELLS TAKE YOU TO THE SAME ROOM.

The Alpha Well, when clicked in the Main Room, takes you to TAE's third-level, the Deep Noise Room. We'll tackle why that is and what that is later in the manual, beginning on page xxx.



[ left ] brick texture in Main Room  
[ right breakdown of brick texture  
in the Layer Editor Room



## the term 'layer'

As we talk about the Layer Editor Room 'layers' throughout this section, keep in mind that we're not referring to the Photoshop layer that TAE is applied to. You interact with that external Photoshop layer when you're playing with the Blend Layer and Opacity Layer controls in the Main Room.

So here in Layer Editor Room, whenever we say 'layer', we are referring to the internal layers that make up your TAE texture.

## regular layers

There are three layers constructing each texture, and two wells per layer. Any well can be turned off (by Alt-clicking). If both wells of a layer are turned off, that layer is effectively not constructing your texture.

So, more accurately stated, there are potentially three layers making up a texture.



## three tiers of layers

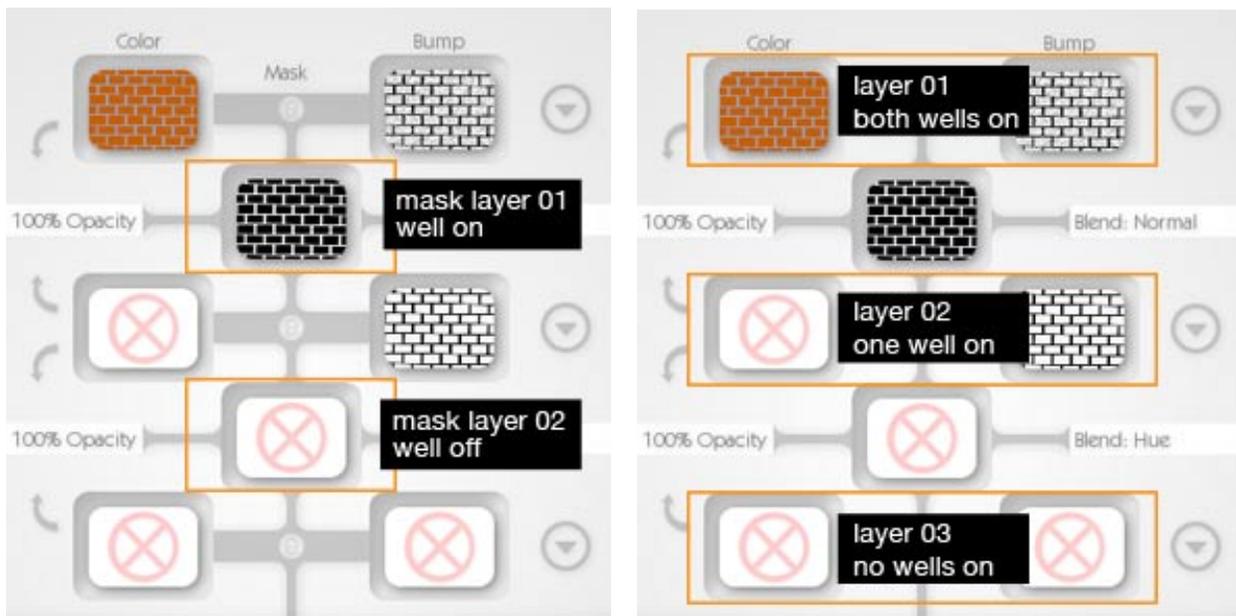
We were going to call this term the Three Level Layer Layout. But then we put down our glass of wine and untied our tongues.

The breakdown of your texture components in the Layer Editor Room can be viewed as three layers that stack and interact with each other. If you're comfortable with how Photoshop layers stack and interact, and in particular the way they incorporate layer masks, this is very similar in concept and function.

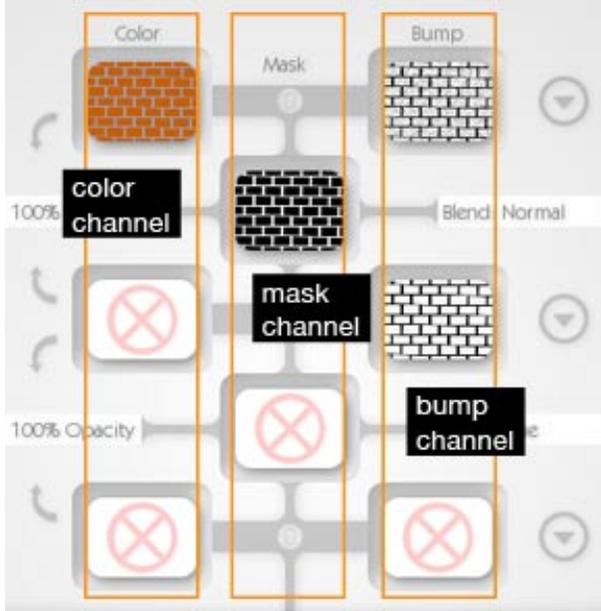
## mask layers

Sandwiched between the regular TAE layers are mask layers. There are two mask layers, and each is made up of one Mask Well.

The mask layer/well acts like a filter between the the layer above and the layer below. This works in principle the way layer masks do in Photoshop. The section on page xx about Mask Channel explains this further.



[ left ] the two mask layers in the Layer Editor Room  
[ right ] the three regular layers in the Layer Editor Room



layers & channels & wells, oh my  
Another way to look at how the Layer Editor Room is composed is to examine its channels of wells.

If the aforementioned layers are rows, then the channels are columns of pixel data that are calculated against each other.

- [ previous, left ] regular layers, or rows of wells
- [ previous, right ] mask layers, or columns of wells
- [ this page, left ] channels of wells

## layer wells

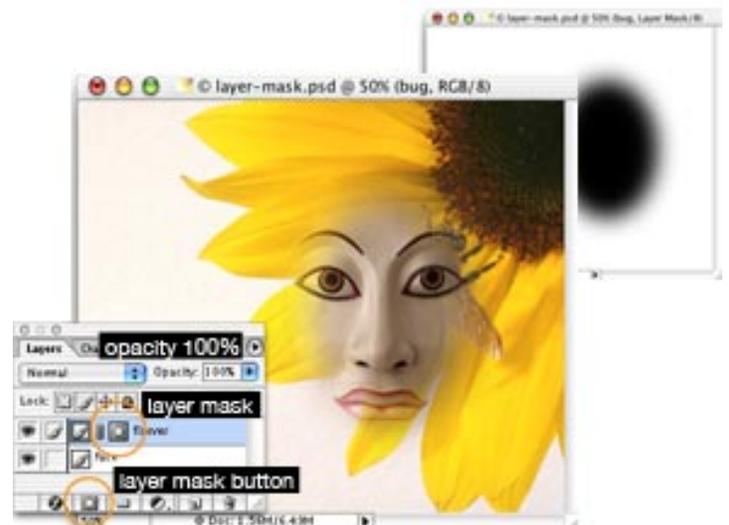
There are two layer wells per regular layer. On the left are the Color Wells. At right are the Bump Wells. There is one layer well per mask layer, called a Mask Well. Each kind of well provides a different service in the compositing of a texture.

## comparison of mask well to photoshop layer mask

With the layer mask button in Photoshop's Layer palette, you apply a grayscale layer that sits invisibly on your Photoshop layer (the 'flower' layer here). You then paint a mask.

In our Layer Editor Room, you set one grayscale layer between two others, and tell the middle one to hide or show the layer beneath.

For both kinds of masking, black reveals the layers beneath (the 'face' layer here). White fully masks out the layers beneath. The range of gray values partially mask what's underneath, with light grays covering more than dark grays.





## the color well

The color well is a set of hues that map themselves to the dark and light values of the Bump texture. It's the 'dye' that seeps over the fabric of your texture, the flavor to your coffee. There are three Color Wells that you can turn on/off.

Color is determined by a color gradient that you set in the Deep Noise Room. It appears as a tone of hues over the grayscale texture in a Color Well.

[please read about the deep noise room to learn more about the color gradient](#)



[ left ] The color of our brick texture changes drastically when we drape a yellow gradient over it. We haven't changed the 100% Opacity level of the red brick overhead. The yellow is showing through the black and dark gray areas of the Mask Well in between, and merging with the red.



[ above ] In this texture, the aqua well below shows through the dark swirls of the mask, cutting into the yellow well above.



[ below ] When the yellow well is turned off, the texture becomes fully colored by the only well showing, the aqua well.



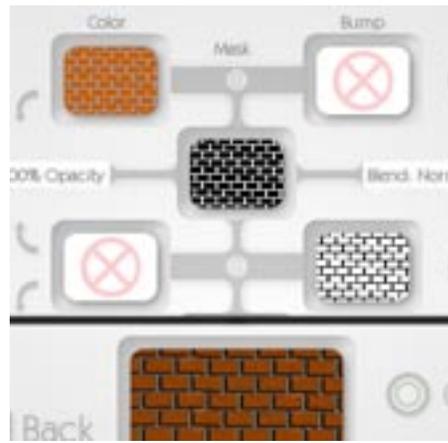
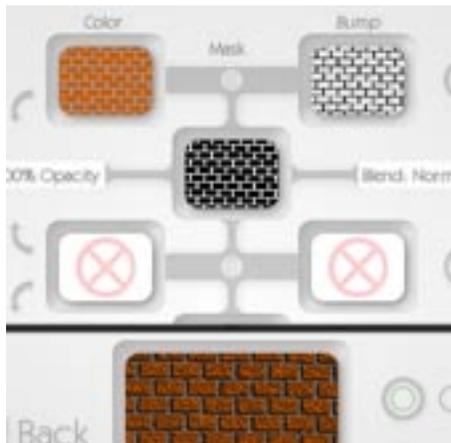
## the bump well

The Bump Well is where you mix the grayscale image that acts as a 3D element for the final texture. A Bump, or bump map, is a way of faking...er, creating...the appearance of texture or 3D relief on a surface. You apply one grayscale image to another image, and recalculate their pixels.

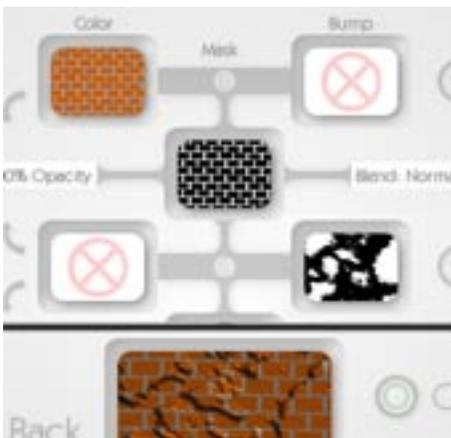
Since your textures aren't really in 3D, they rely on the dark and light areas of the Bump to determine where a shadow should fall or a highlight should be placed.

Take a look at Bump and notice where the white areas, or 'peaks'. These areas will cast shadows in one direction or another and generate the highlights on their peaks. Lighter shades of gray are viewed as peaks, and darker shades are viewed as valleys. If there is no variation in the gray values, like a neutral gray, then no shadows or highlights appear.

[please read the lighting editor and the main room's bump well for more info](#)



Looking closer at our texture.  
[ top left ] brick texture in the top bump well  
[ top right ] brick texture in the bottom bump well  
[ bottom left ] spotted texture in the bottom bump well



Three versions of our brick texture, each using one Bump Well.

Two compositions use the same brick texture that's in the Color Well. When that grayscale image is used in the top well, it provides a rougher texture than when its used in the lower well. This is because in the latter example, the Bump texture is filtered by a Mask.

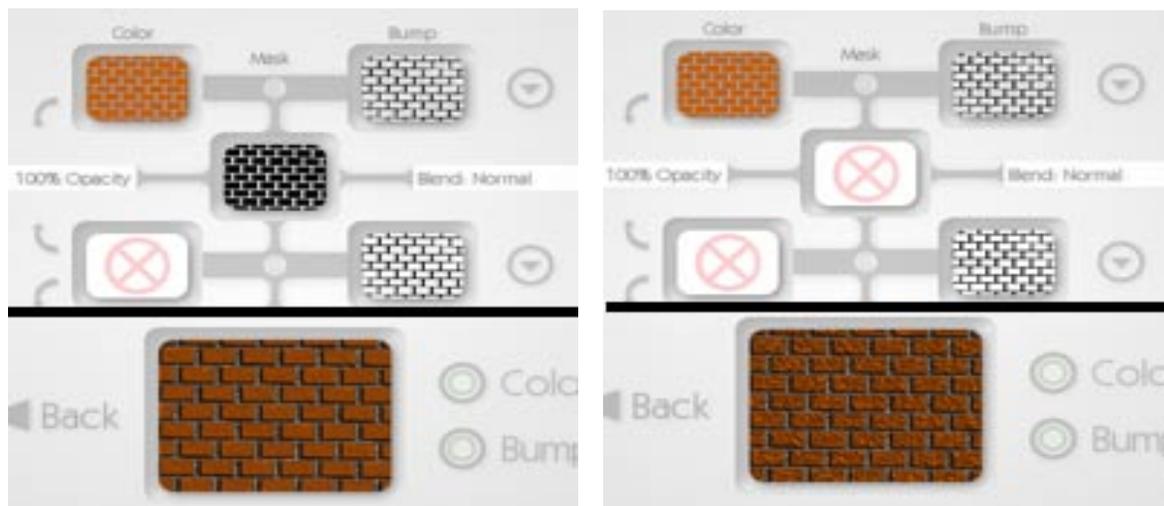
In our final composition, a different grayscale texture has been loaded into the Bump Well. This 'spotty' pattern contrasts with the brick pattern in the Mask Well that interacts with it.

## the mask well

The Mask Well plays a very important function in the composition of your texture. It determines which values of the Color and Bump wells will be revealed along the pipeline of the Layer Editor Room. This determination happens based on the gray values of the Mask.

Black pixels in the Mask are fully transparent, and fully reveal any pixels sitting below. White pixels are fully opaque, and don't reveal any textures below. All gray values are semi-transparent, with light grays showing less and dark grays showing more.

[please see page 59 for a comparison of mask layers with layer masks](#)

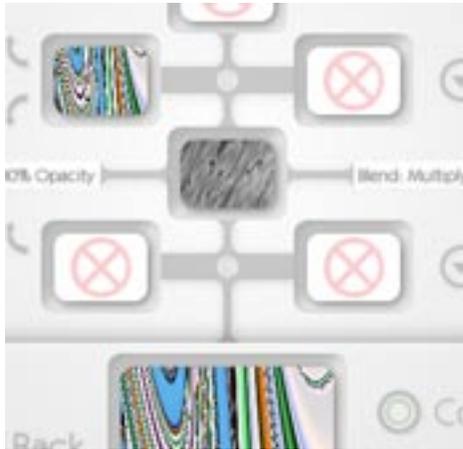


Sometimes turning off the Mask results in a subtle change. [ left ] With a Mask that mimics the rectilinear pattern of the Bump Wells it's filtering, the white mask areas cover over the lower bump map, which makes the texture relatively smooth in those areas. Compare the grittiness of the 'ceement' to the 'bricks'. [ right ] With the Mask turned off, the resulting texture is rougher looking. This is because the lower Bump is now fully showing through the entire brick texture.

### tip :: blend mode of normal

With the Blend Option alongside set to Normal, a Mask Well turned off means that it doesn't matter what Layer Well is showing beneath. The result is the same, no filtering through between layer one and layer two.

## section seven : [ tae ] : the layer editor room



[ left column ] In a different example, the Mask of this grassy texture above creates a dramatically different look if green Color Well below is turned off.

The interaction of the green Layer 2 and multi-colored Layer 3 actually has to do with the Mask well, actually. Its dark values (black, deep gray) allow the green to show through the multicolored well. The Mask's light values (white, light gray) cover over the green.

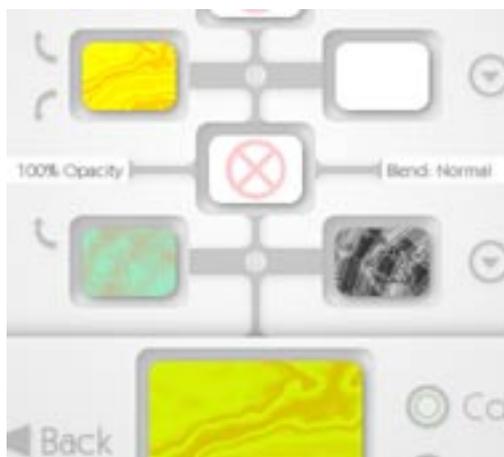


[ right column ] A further example of How Masks Work for You. This gold-aqua swirled texture is very homogenous looking if its Mask is turned off.

[ top ] With the Mask on and yellow Color Well off, an aqua swirl pattern appears, as the mask imposes its transparency values that translate the white Bump Well above.



[ middle ] With the Mask on and the aqua Color Well off, the yellow Color Well has the hues that are accessed by the swirls.

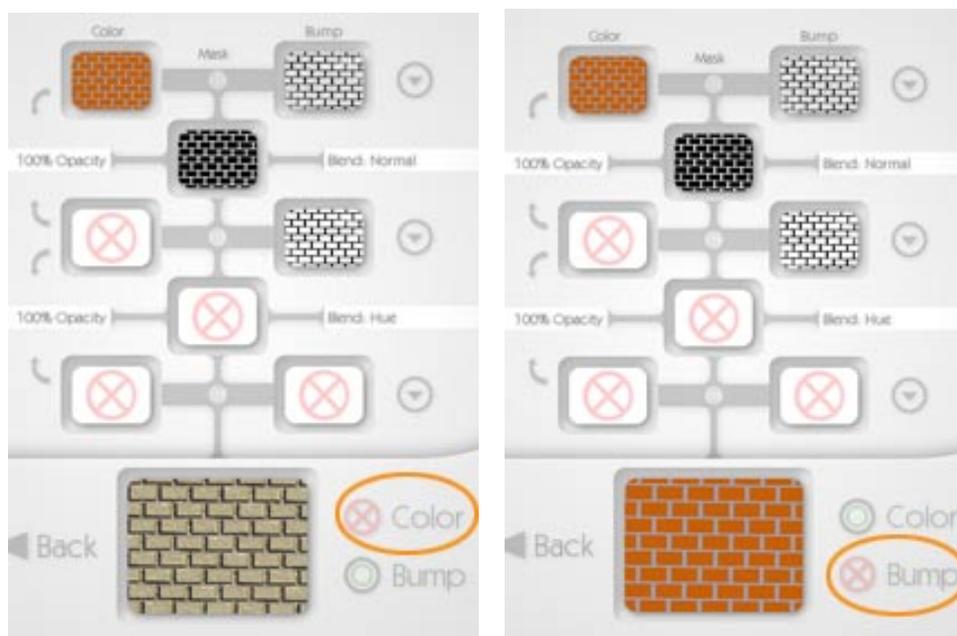


[ bottom ] With the Mask turned off, there is no swirl pattern imposed. The two Color Wells interact subtly, as do the two Bump Wells.



## toggle view of color/bump

You can turn on or off the Bump or Color Well preview. This doesn't affect the structure of your composition at all. It's simply a way of working with a partial preview. Hiding some of the layout may subtly affect what you see, so be aware of what you have turned on and off.



[ left ] view of the  
Color channel is off  
[ right ] view of the  
Bump channel is off

## turn off a well

You can toggle on/off the layer wells by Alt-clicking, same as with the component wells in the Main Room. Turning a texture well off hides that texture visually, and takes it out of your texture construction.

Alt-clicking is a great feature for experimenting with your composition.

## copy a well

A popular and powerful way of working is to drag a texture from one layer well to another. Doesn't matter if you're dragging between similar wells, or a Color to a Bump to a Mask.

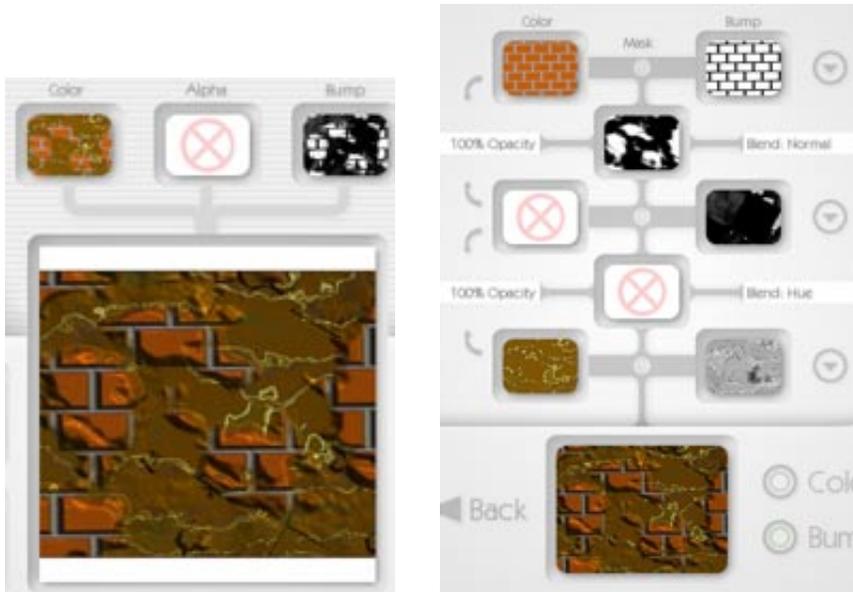
You can drag/drop a texture by Control-click/dragging on the Mac, or Right-click/drag on the PC. Combine this feature with the Transform controls to use one texture a variety of times, in varied disguises, for varying purposes.



## layers are a many splendor thing

The Layer Editor Room is so exciting because it sets up as an arena for multi-layer movement. That is, in the Main Room, you basically determined the contents of just one texture well at a time.

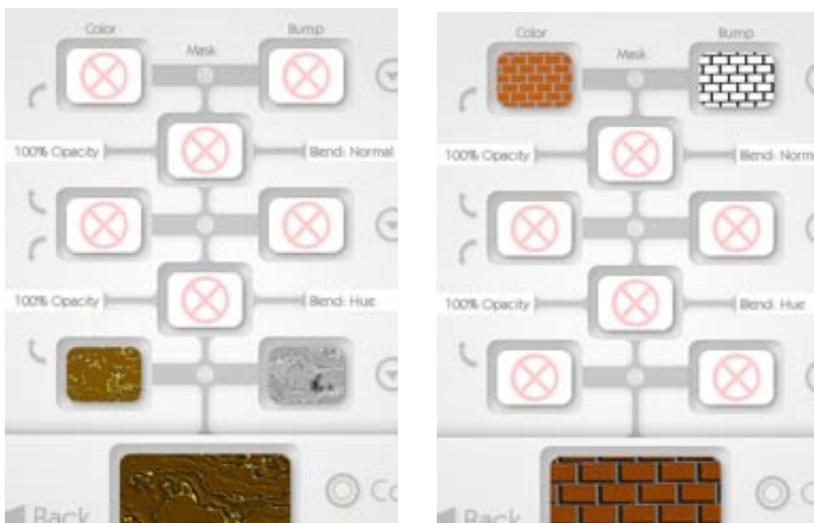
Here, it's all about comparing the pixels of one layer to the pixels of another layer, and creating a unique visual display by compositing them. We've talked about this already in discussing each kind of layer well, especially the Mask Well. But, let's take a closer look.



### play in the mud

We'll load in a new texture for this, the Muddy Bricks preset, which uses the brick texture we've been working with in the Layer Editor Room, but has more 'stuff' (a very technical word among compositors) added in.

[ top left ] the texture in the Main Room [ top right ] and in the Layer Editor Room [ bottom left ] only bottom layer on [ bottom right ] only top layer turned on

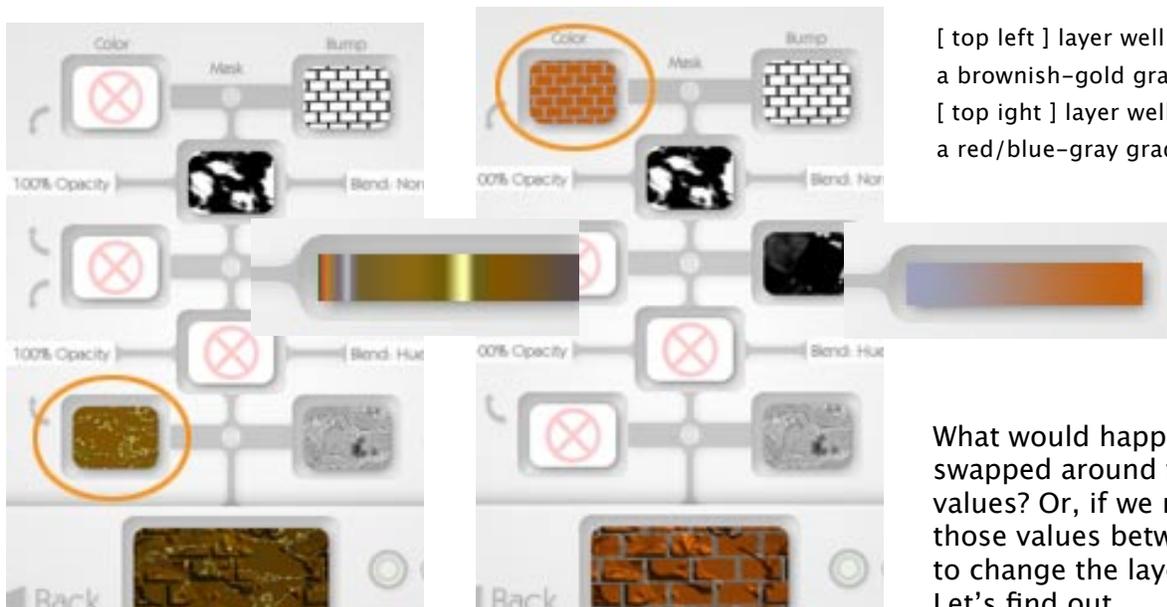


Now let's play around with these layers to create something new. We can turn on and off layers We've turned off Layers 2 and 3, then Layers 1 and 2, to get a sense of the major visual elements. Basically, it's a layer of rectilinear 'brick' with a layer of smoky



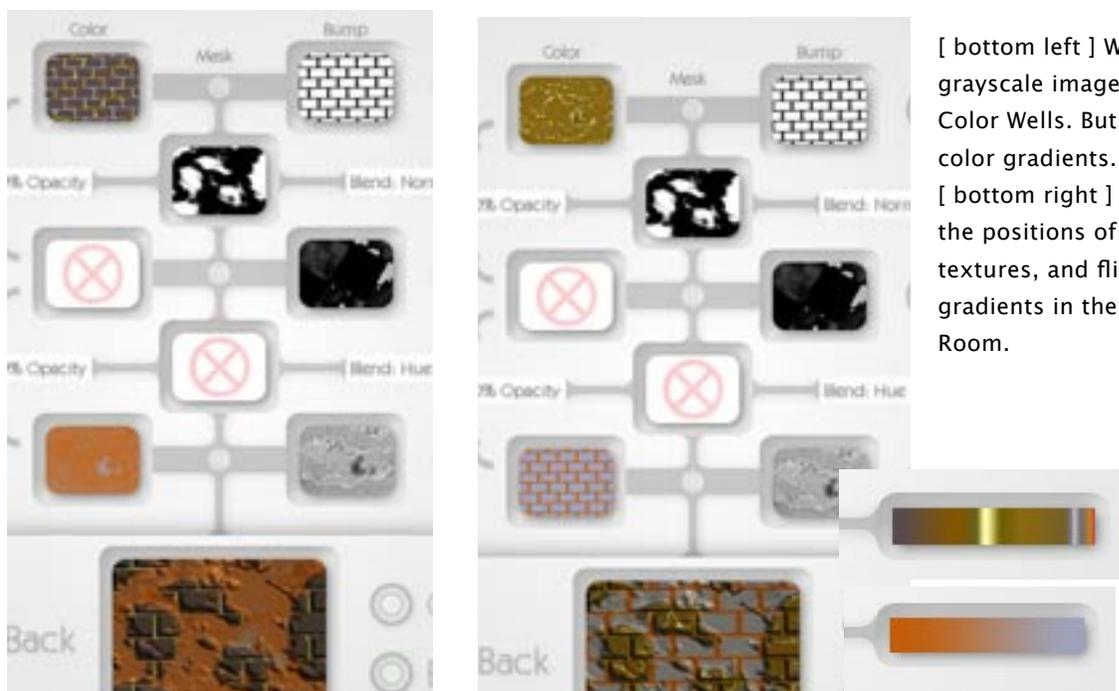
## moving your layers around

Here are the two color gradients that overlay the two grayscale textures that sit in the Color Wells. Without these colors, we'd have an intricate texture that's all gray values. We can edit the gradient by clicking on a Color Well to enter the Deep Noise Room.



[ top left ] layer well with a brownish-gold gradient  
[ top right ] layer well with a red/blue-gray gradient

What would happen if we swapped around these color values? Or, if we moved those values between wells, to change the layout itself? Let's find out.



[ bottom left ] We've kept the grayscale images in their usual Color Wells. But, we've swapped color gradients.

[ bottom right ] We've switched the positions of the Color textures, and flipped their color gradients in the Deep Noise Room.

## section seven : [ tae ] : the layer editor room



[ left ] the original Mask and its Deep Noise elements { right ] the inverted Mask

### changing the gray values

At top left is the fractal noise type and its gradient that make up the mask in our Muddy Brick. The mask filters the top texture against the middle texture.

What if the mask used the texture at top right? How would that change our final texture? Well, a major visual element, the muddiness, gets inverted. This is because the white values that had masked out the brick pattern are now black. So, what was hidden is now revealed.



Instead of mud caked into bricks, this looks like mudpies splattered on a brick wall.

[ left ] original texture [ right ] new texture with inverted Mask



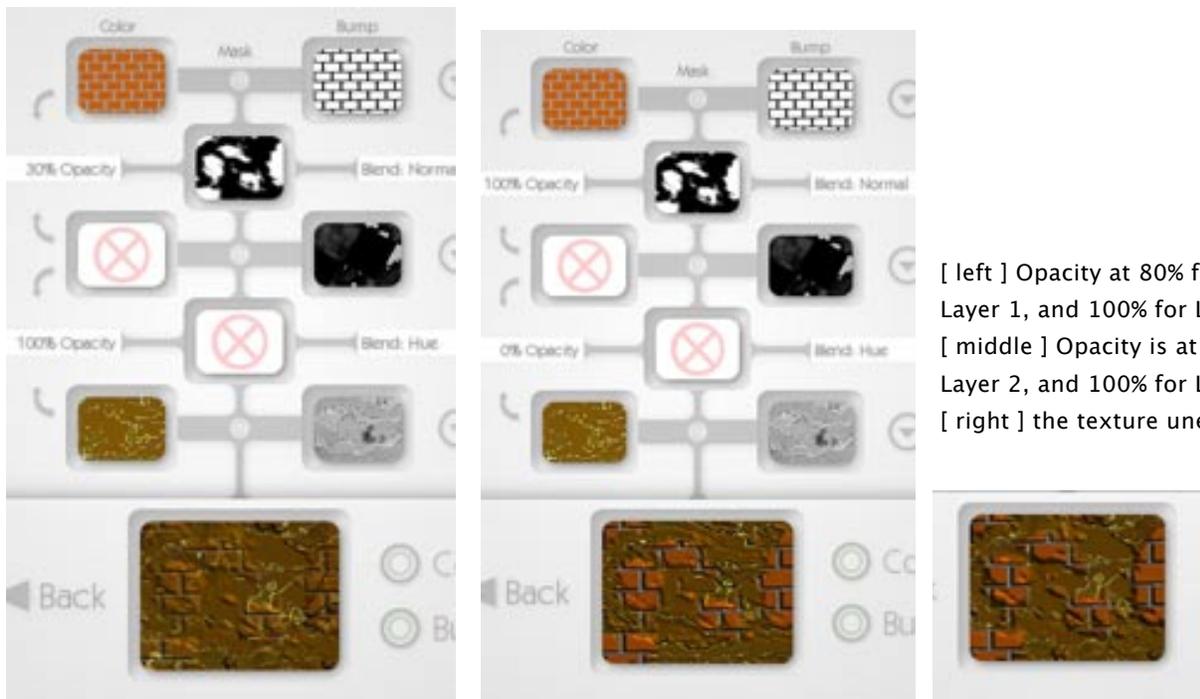
## opacity control

Opacity decides how the Color Wells interact with each other.

It sets the opacity level for the layer well above. That is, the amount of transparency that's created on that layer.

Opacity only has meaning when used on a top layer over a bottom layer. If there's no bottom layer the opacity for the second layer is useless. Since the Bottom layer will never be above anything, it does not have an opacity control, and will not show any reaction to an Opacity setting.

Additionally, Opacity controls the effect of some Blend Modes. For example, Dissolve in the Layer Room, and Distortion in the Deep Noise Room.



[ left ] Opacity at 80% for Layer 1, and 100% for Layer 2  
[ middle ] Opacity is at 0% for Layer 2, and 100% for Layer 1  
[ right ] the texture unedited

In our example above, changing the upper Opacity control affects the for the top layer well, and creates a slight change in the resulting texture. But, changing the lower Opacity control creates no visual change. This is because the opacity has changed for the middle Color Well, which is turned off, not the bottom well.

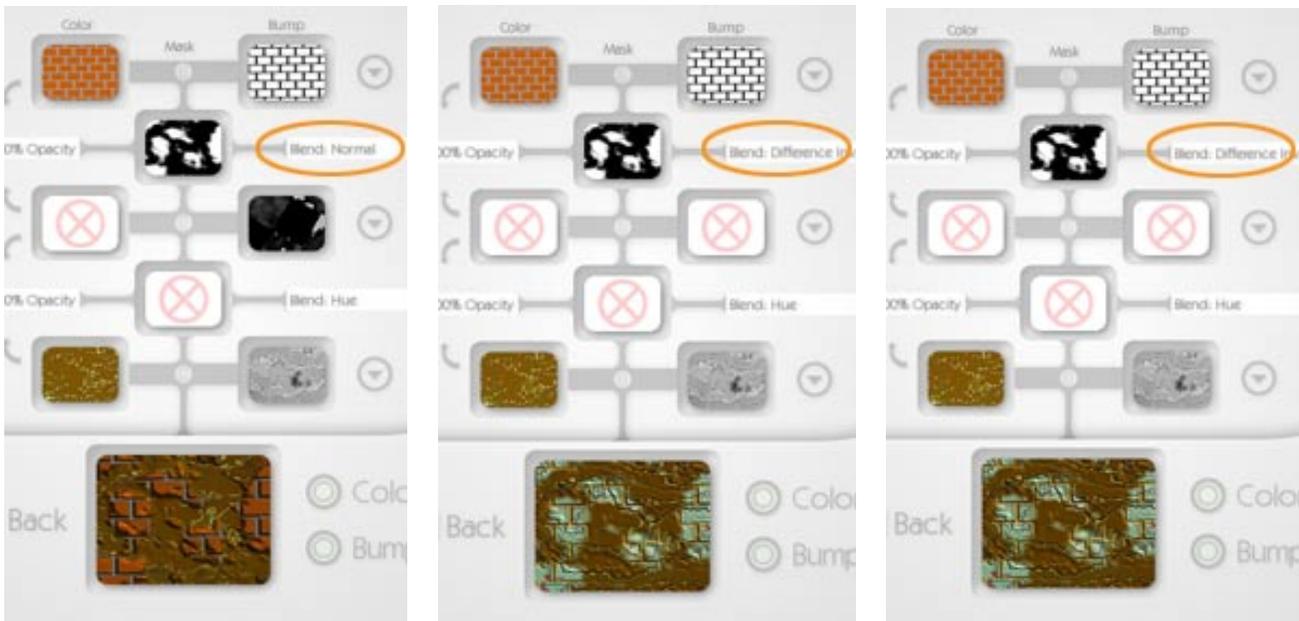


## blend control

Blend mode decides how the Bump Wells interact with each other. It looks at the Bump Well above it, and if that well is turned, then the Blend will calculate any reaction between that layer and the layer below it.

The effect that is produced is dependant upon the blend type chosen, and the grayscale values of the two layers being blended. It's a control with enormous capabilities, potential and impact. Use it for good.

Some would also say it's produced by magical fairies that do mysterious unpredictable wonders, but here at Digital Anarchy we know it's actually gnomes that are behind everything.



[ left ] Blend is Normal, all layers on [ middle ] Blend is Difference [ right ] Blend is Difference

The Blend is not dependant on whether the mask layer in between is active - it will show a blending effect if one can be produced.

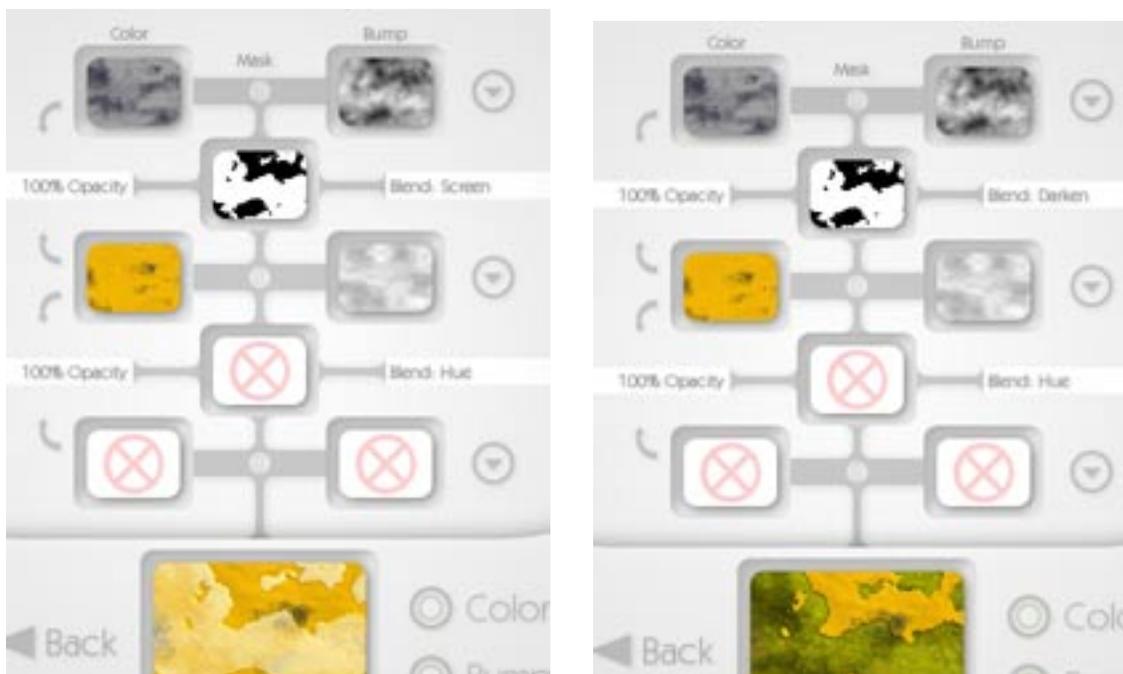
Blend can also 'jump' layers. Let's say Layer 2 is turned off. The Blend mode set for Layer 1 will show any effect that is created in reaction to the pixels in Layer 3.

[please see Appendix A for an extensive list of the beauty of blend modes](#)

section seven : [ tae ] : the layer editor room



More Blend magic. [ top left ] the original 'Cracked Paint' texture, with a Blend mode of Normal [ top right ] results in a egg-yolk texture with Blend changed to Extrapolate [ bottom left ] and a duller eggshell yellow with Blend changed to Screen [ bottom right ] with, finally, a more useful camouflage texture using the Blend Darken mode





## examining the layer structure

Something really interesting in this Muddy Brick texture is common through many textures, including our presets. You will find that there are either (a) extra wells turned on than are necessary, or (b) more than one way to achieve the desired result.

For instance, at left is the texture as it ships. But in the scenario at right, we've made some changes to the Blend channel. Layer 2 has been turned off. Its texture was copied to the well below, Layer 3. There is no visible difference to the texture that previews below.

Why is this? Because there's no change to the 'mixture' of this composition.

Look at the Blend channel. the active Mask well acts as a filter to show one texture below. At left, it filters the image in Layer 2, at right, and the image in Layer 3 – the same graphic in both cases. At left, the image in Layer 3 is never revealed, because there is no Mask in the lower mask layer to access it. So, it doesn't matter that the 3R well is turned off in the right-side example.

Also, the Blend modes don't have any effect. Blend looks at the layer above it. Normal affects Layer 1/Well 1 in each composition. But Normal is the neutral mode, it doesn't produce any visual change. When Layer 2 is turned off, the Hue Blend mode doesn't have a well to affect. It doesn't look at Layer 3 below it, so it doesn't matter that this Bump well changed its texture.

And that, folks, is what compositioning is all about.



## transform controls

TAE gives you multiple ways of editing your texture with Transform tools and keyboard commands. A powerful way to construct your texture is to scale, rotate, skew, or shift it.

Transform controls appear for all texture wells, in all three rooms. As you transform the component wells, the Main Well updates its preview.

## transform tools

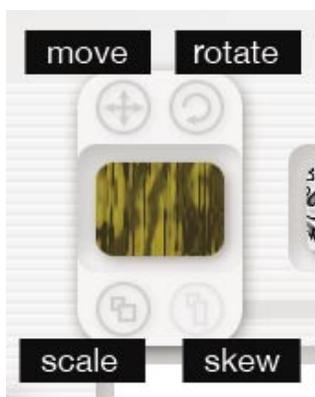
When you hover over a texture well, a box of icons appears around that well. This is the Transform Toolbox. Click and drag over the tool, not the texture, to make the transformation happen.

**Move Tool:** This shifts, or pans, the viewable area of the texture.

**Rotate Tool:** This rotates the texture.

**Scale Tool:** This proportionately increases or decreases the size of the pattern.

**Skew Tool:** Squashes or stretches the texture in one direction. This tool is available only in the Deep Noise Room.



## transform commands

There are keyboard equivalent for some Tool actions. To use keys, you'll want to click inside the texture well, instead of over the Toolbox icon.

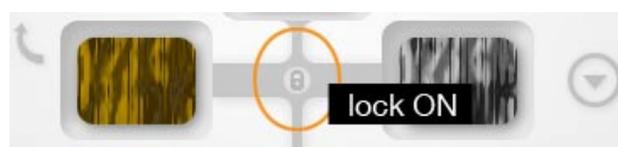
**Move:** Just click and drag.

**Rotate:** Hold the Apple key (Mac) or Control key (PC).

**Scale:** Hold the Shift key.

## the lock icon

In the Layer Editor Room, a Lock Icon appears in between the Color and Bump Wells of a layer. Having the Lock turned on means the Color and Bump transform together. Clicked off, these Layer Wells are not locked together, and one may be scaled, rotated, or panned without the other.

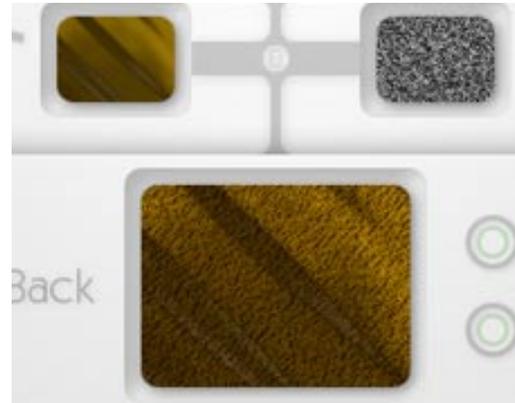


## how to transform your life

Using the Transform controls - commands or tools - you can take one texture and contort, distort and otherwise resort to creating fully new textures.



[ top left ] the original Color and Bump wells for the Rotten Wood preset  
[ all others ] five variations of the preset, all created by rotating, panning, and scaling the two layer wells

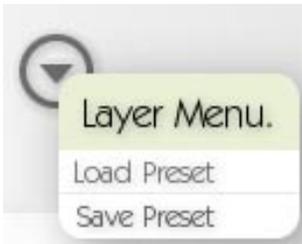




## layer presets

To the right of each Bump Well, you will see a drop down arrow. This is where you'll find the Layer Preset Manager.

Like all the other Preset Managers, you can load and save presets. A Layer preset saves both wells in a layer, the Color and its paired Bump. Layer presets work in the Layer Editor Room only, and in TAE only.



- [ top left ] what you save in the Layer Editor Room
- [ top right ] what the resulting Layer preset looks like
- [ bottom left ] the Layer preset button



Welcome to the heart of Texture Anarchy. This is the source of whence all things come.

Actually, there are two versions of this room, one for the Bump channel and one for the Color channel. The only difference is that the Color channel has a gradient editor to set the overall color.

Here is where you'll build the base materials that will make up your final texture. You'll combine up to three different base noises with blend modes, gradients, and opacity. With the 38 base noise types, you can create a seemingly infinite number of different materials from which to base textures on.

Hmmm...What are the base noise types? What's fractal noise? It will be revealed...

## first there was fractal noise...

The dictionary.com definition of 'Fractal' is as follows :

"A geometric pattern that is repeated at ever smaller scales to produce irregular shapes and surfaces that cannot be represented by classical geometry. Fractals are used especially in computer modeling of irregular patterns and structures in nature."

Fractals appear in nature constantly, which is why they're particularly good at creating realistic texture. For example, take a tree branch. Without an outside reference, like a house or a yard stick, there's really no way to tell how big a branch is. The tiniest branch looks pretty much the same as the largest. If someone showed you two pictures of silhouettes of branches on white backgrounds, you'd have no way of knowing which is bigger.

As you move back from a smaller branch that's part of a large branch, you'll see the same basic pattern emerge in the larger branch that you saw in the small one.

Fractal noise behaves in much the same way. As you zoom in or out, you see the same general pattern repeating itself.



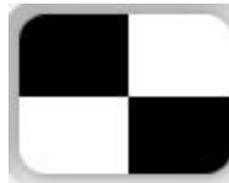
## ...and then there were base noises

The base noise types are all different types of fractal noise.

Each base noise has a mathematical shape that it repeats endlessly to create what you see on the screen. All the base noise types are algorithms, which basically go on forever. This is what is called a procedural texture or noise. It's mathematically defined and as you keep plugging new numbers into the variables, it keeps rendering out new stuff.

The most simple of these is your standard, infinite, checkerboard, which repeats the same shape:

[ the simplest  
of all noise ]

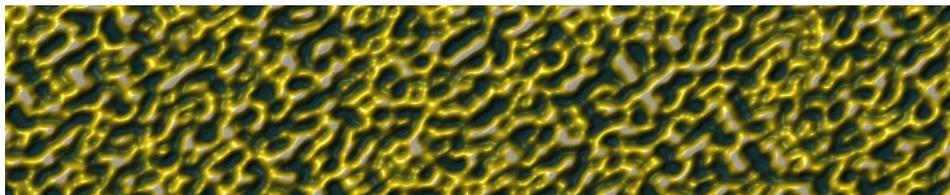


## similar but not the same

Most of the base noise types are random Fractals. This means they don't produce exactly repeating results. You can render them out to any resolution, size, whatever and you'll never see exactly the same thing twice (under normal circumstances).

There will be many places they look similar, but you'll never see the exact same pattern. However, like our branch, you'll see similar patterns.

Here's a simple base noise:



It definitely looks similar in many places, but can you see a true pattern? You can't. This is because the algorithm is always getting different values and is always generating something unique.

This characteristic is extremely valuable for creating naturalistic simulations. Much of the world works the same way. If you look at the texture on a rock or the way water runs down a window, you'll see patterns that look similar, but are never the same. Same with snowflakes, trees, river networks, you name it.



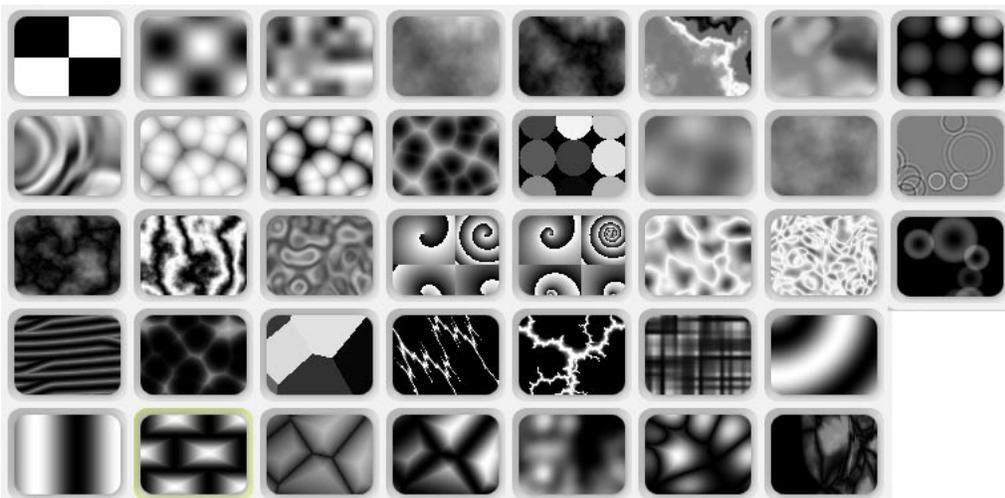
## randomness in pattern

The randomness of fractals allows Texture Anarchy to create textures that look amazingly real. Of course, it can create plenty of textures that look completely un-realistic.

This is not to say it is completely random. It is not... more because computers can't generate truly random numbers. This is a benefit to us, since it's helpful to leave a session and come back later and still be able to pick up on the same texture we walked away from. If computers had truly random numbers, we'd never see the same texture twice. This would be a problem for those of you actually trying to do work, where repeatable results generally tend to be a good thing.

## the noise types

Here's the 38 different noise types.



Note that all the base noise types only use shades of gray. This makes combining them much more predictable and makes them easier to use. Speaking of grayscale...

[please see appendix B for a list of these fractal names and general uses](#)



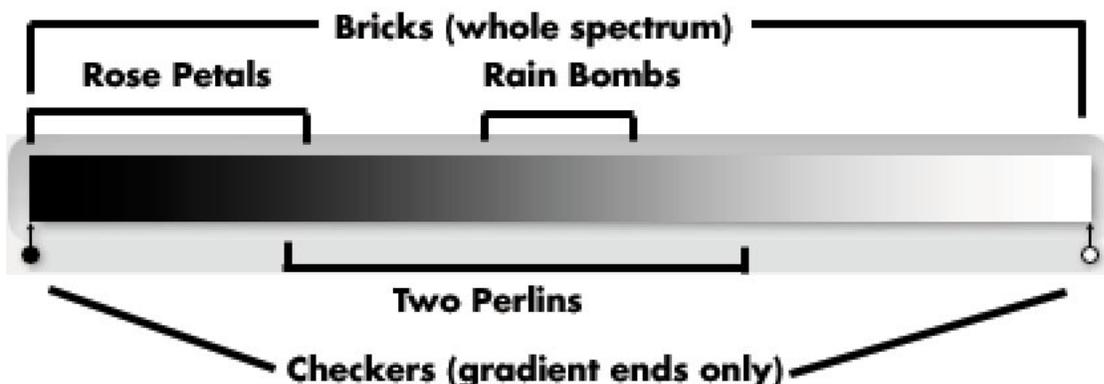
## grayscale: mapping the noise

One of the more difficult things to grasp is how the different base noise types use gray shades. Each noise has a different area that it exists in. For example, many people may live on your street, so for someone to find you they need your complete street address.

The same is true for noise. Each noise type has an area of the grayscale spectrum that it lives in. Some noise types use the complete spectrum, others just use a small portion. Some noise types appear to use the whole spectrum, but in fact only use sections of it.

In the Checkers noise, it only uses the beginning and end values of the gradient.

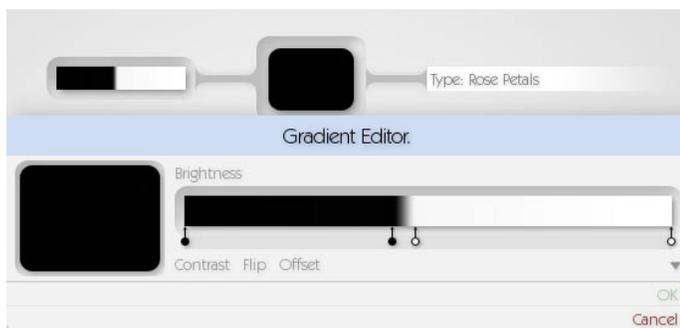
Here's a chart for five different noise types (out of the 38). Adjusting the gradient outside of the brackets relating to each noise will have no effect. Only the gradient points within the brackets will cause a change in the way the noise looks.



### an example

Let's use the Rose Petal noise type as an example. As you can tell from the following image (and see from the spectrum chart above), all of the noise is contained in the black area.

The noise is not 'mapped' into the part of the gradient that is white. We know this because if it were, we'd see white areas of the noise showing up.



## section eight : [ tae ] : the deep noise room



### more examples

In the next image, notice that we have shifted the white area down some and the noise is starting to show up. This indicates further that most of the noise is located in the first 25% of the gradient, which is currently black.

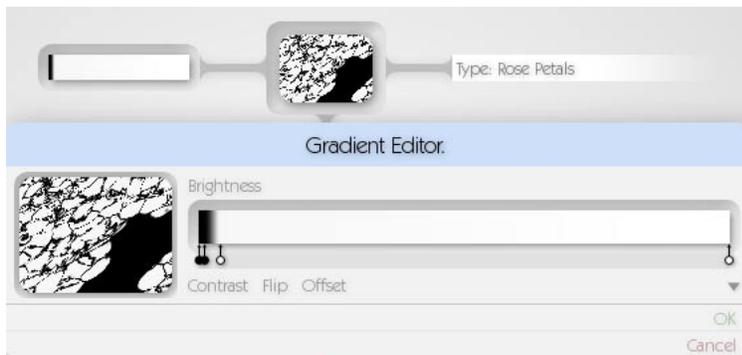
In order to get the noise to show up, we need push the white all the way to the left edge of the gradient.



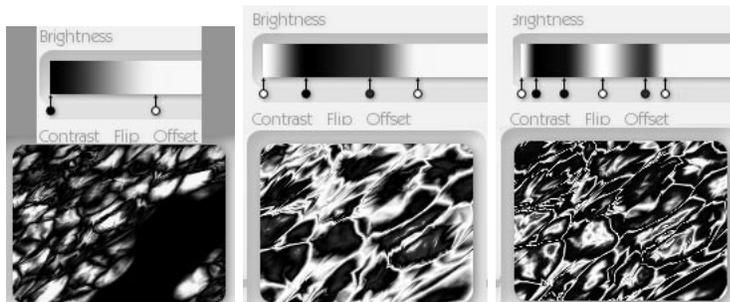
### watch the noise

With the solid white all the way down at the end you can really see the noise start to show up.

The noise is really matched up with the first 1/3rd or so of the gradient. So we know if we want to manipulate the noise, that's where we need to put our gradient points.



Usually, you won't want the noise to be solid white. In order to soften it up you need to create a regular gradient.



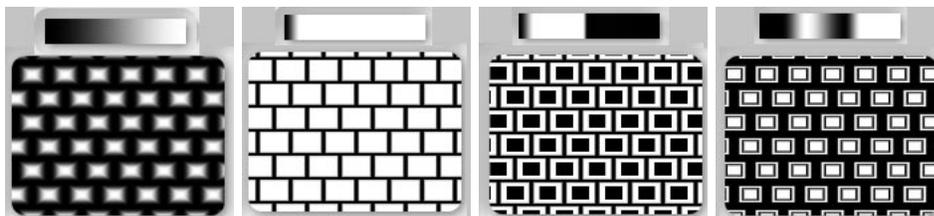
You can also use multiple points to create more complex noise effects. Like so.



## using multiple gradient points

Even when a noise uses the entire spectrum, like the Bricks noise type, it's useful to realize you can adjust sections of the noise without affecting other sections. By setting multiple points in the gradient you can create ever more complex variations of the noise. You can tease out patterns from the noise that wouldn't be immediately obvious.

Bricks is a fairly simple pattern, it creates a brick-like result. However, by using multiple points, and understanding how the gradient is mapped to the noise we can pull out a variety of different effects.



[ here are four  
Bricks patterns ]

Notice that as we move the gradient points around, different parts of the noise become visible. This is an extremely important thing to try and wrap your head around.

Most of your complex textures will require some tweaking to get exactly the look you're going for. Unless you're comfortable just letting the Mutation controls generate textures for you, it'll be very helpful to understand noise. As with many aspects of Texture Anarchy, a little experimentation goes a long way.

All the noise types react to different parts of the gradient differently. So if you don't see a result you immediately like, jump into the gradient and start pushing and pulling points around. With 38 noise types and basically an unlimited number of gradient points the variations you can come up with are practically infinite.

## building materials : start simple

If you look at most of the preset textures, you'll discover that a good number of them rely on one noise type and a color channel and that's it! You can create some beautiful textures with a single noise type and you don't even need to worry about combining them or using multiple layers or any of it.

Of course, you can create even more intricate textures by using multiple noises and whatnot, but for the moment let's just look at using one noise.

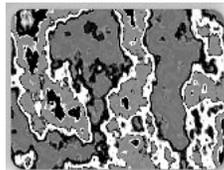
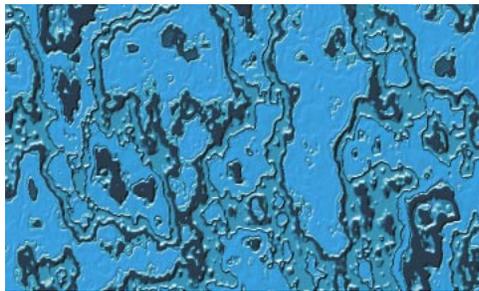


## one noise, one king

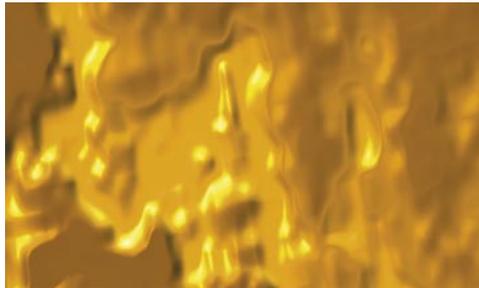
Let's take the Marble noise. This is a fractal that tends to have 'marble-ish' look to it, because of the veins of noise that stand out. Honestly, there's another noise called Marble Perlin which is much better at actually creating marble. However, this is a fast rendering fractal that has many other uses as you'll see.

All of the following textures were created with a single channel of Marble noise in the bump layer and a single channel of Marble noise in the color channel. The textures can be found in the presets if you want to take them apart.

This is really just an exercise to show what can be done with a single noise type, some coloring, and creative use of the gradient that makes up the noise.

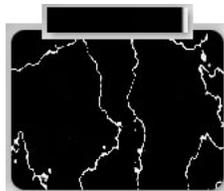
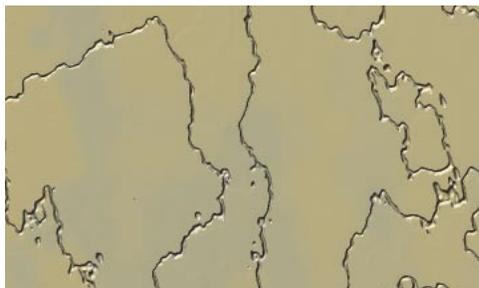


[ top ] here we're scaled back a bit, with a standard black to white gradient

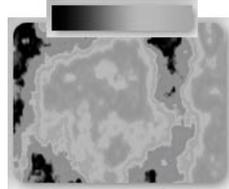
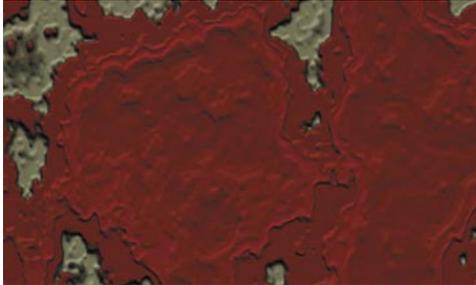


[ medium ] we've scaled the noise up and made good use of the color channel and some lights.

This is created by leaving only a thin sliver of white in the gradient to isolate the marble veins.



[ bottom ] and now we go back to manipulating the color channel to pull most of the effect off. Notice the muted shades of gray, and no bright whites in the bump map



[ left ] just proof that we only used one channel of noise on the last one

So that's given us some pretty good variation without much work. Granted, Marble tends to lend itself to organic looking textures so the textures aren't wildly different. However, they're different enough that I think you can see the possibilities. And that's just one of 38 noise types, by itself. What happens when you start mixing and matching? My god... it just gets crazy, I tell you.

## mixing multiple noises

So we've seen what can happen with one lonely noise type. Now let's mix them up a bit.

The noises use blend modes to combine together. You can simply adjust the Opacity and blend them that way, but you tend to get better results using blend modes. It creates a more seamless, natural blend and that tends to produce more natural looking textures. Of course, sometimes they blend in un-holy ways and the result is completely whacked. If the combined noise starts to grow horns, threaten you, and bleed out of your computer screen... just change the blend mode and find a blend with less 'issues'.

## real world meets blend modes

How the blend modes actually work are discussed in the 'Blend Mode' section. However, in the real world, no one actually knows how they work. You just flip through them until you find a combination that works for you. Even the texture gurus and goddesses here just flip through them. Except for one of the programmers who loves discussing the mathematically properties of blend modes and can tell you exactly how everything will blend. As for the rest of us mortals, we just flip through them.

Yes, yes... I know... your parents told you to be ashamed of flipping. It's ok, tho', it's natural to want to flip. Everyone flips through blend modes, you can flip too.

Er, um... back to the regularly schedule program.

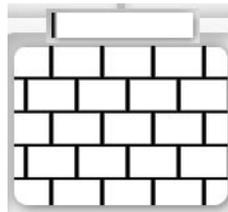
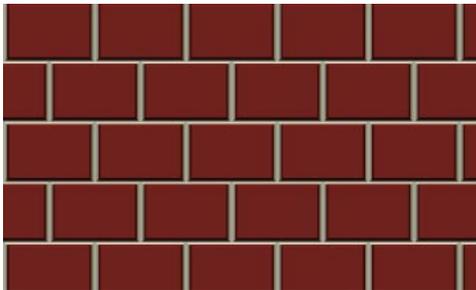


## mixing layers

The Deep Noise Room is much like the Layer Room in that the noises are top-down. The layer at the top is, well, on top. If the Blend Mode is set to Normal and Opacity is set to 100%, you can do whatever you want to the bottom two layers and it won't make a bit of difference.



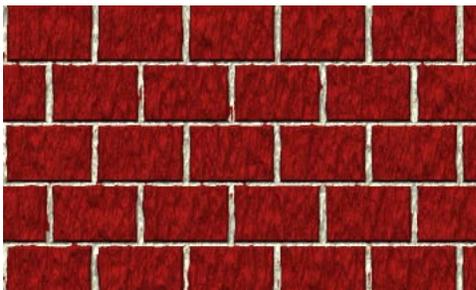
It's only when you allow other layers to show through (or blend with) the top layer that they have an effect.



[ when we create a basic, single channel brick texture, here's the resulting noise ]

It's pretty simple to get this basic brick type. Just adjust the gradient as so, and you've got bricks. The problem is that they are very flat bricks. This might be fine if you're creating cartoon bricks but for something that looks realistic it doesn't work very well.

What we want is some texture on the bricks to indicate that they're worn and rough. We can do this easily by selecting Cloud Noise and zooming out a bit.



[ set the Blend Mode between the two to Average and you get something that looks like this ]



### adding roughness

Most of the noise types will work well for adding 'roughness' - as we did in the previous example - when you zoom far enough out.

Basically you're trying to add that layer of dirt, whether it's dirt as in some variation in color or dirt in the sense of variation of surface. There aren't too many bricks that are perfectly flat and by combining the Cloud Noise with the Brick noise, you add that sense of unevenness.

This is a trick you'll use constantly when designing textures. Get the overall texture that you want, then pile a heap of Cloud Noise (or other noise) on top of it to get rid of the 'perfectly made in a computer' feel.

### using the distortion blend mode

Let's further beat the hell out of our bricks. This time we're going to use a blend mode called Distortion. This is notable because unlike the other blend modes, this doesn't just blend the shades of gray. This uses the topmost noise to distort the noise below it. This is key functionality when it comes to getting a noise to look like it's being affected by some other noise. You'll need this quite a bit.

Going back to our bricks... They look nice and all, but they still look sort of computer generated. The additional noise is still a bit too... consistent. If you look at real textures, you'll see that in some areas it'll be rough and some areas it'll be smooth in sort of a random way. Textures very rarely have the same uniform amount of 'roughness'.

Distortion isn't the only way to combine noises to create a random effect (as opposed to a Random (but not Random) effect), but it's a noteworthy way. And worthy of special mention because it's something you'll use. A lot.

It requires us to flip things around a bit. Since the distorting layer needs to be on top, we're going to put our bricks at the bottom.

### tip :: adjust distortion with opacity

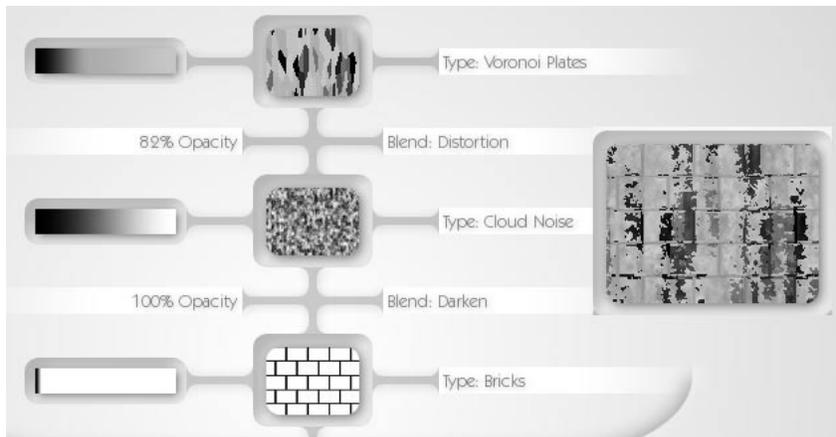
The Voronoi Plates noise at the top is doing the distortion. You adjust the Distortion by adjusting the layer's Opacity level (note it's set to 82%). The lower the Opacity, the less distortion. The higher the Opacity, the more distortion.

## section eight : [ tae ] : the deep noise room



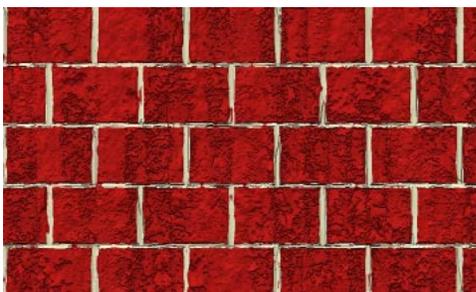
### move your layers around

The great thing about blend modes is that you can move layers around, change the blend modes a bit, and still get more or less the same effect. Very helpful in situations like these. Take a look below.



[ left ] we've moved the brick layer to the bottom of this composition, which changes the stacking order and resulting image

The amount of distortion is dependent on the gray values of the noise doing the distortion AND the noise being distorted. It creates a displacement effect, which pushes pixels around based on the luminance values of the displacing layer.



[ left ] the Cloud Noise is providing extra texture as before and is also being distorted, which altogether results in this

We now have a much more interesting texture on the bricks. Almost as if portions are crumbling. BUT... it's not all crumbling. There are other areas that are holding together just fine. It's much more complex and much more realistic.



## final noisy babbling

You've just completed a section about fractal noise, blend modes, and how to love them. This should give you an idea of how much power there is combining noise types into different types of materials... to say nothing of the Layer Room and the ability to take three different materials and then combine those.

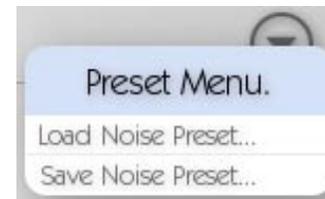
The trick really is to get familiar with the various noise types and blend modes, but it's not necessary to know them backwards and forwards. You are always going to have to experiment a little to get the effect you want. But there's a big difference between knowing the general direction you want to go and the couple roads that might take you there vs. standing in the middle of a field with no clue.

Hopefully this has given you a bit of a clue and you can start designing textures from scratch without being completely overwhelmed.

## deep noise room presets

In the very upper, right corner you will see a drop down arrow. This is where you'll find the Noise Preset Manager.

This works in the Deep Noise Room EVERYWHERE. That means it works in Edge Anarchy, Tiling Anarchy, the Alpha Channel room (which is off the Main Room of Texture Anarchy), and anywhere else you end up in the DNR. It's a key way of getting noises to move between filters.



It's the only way of getting anything into the Alpha Channel room, so if you want to use a noise you've created as a texture as an Alpha, you'll need to use this.

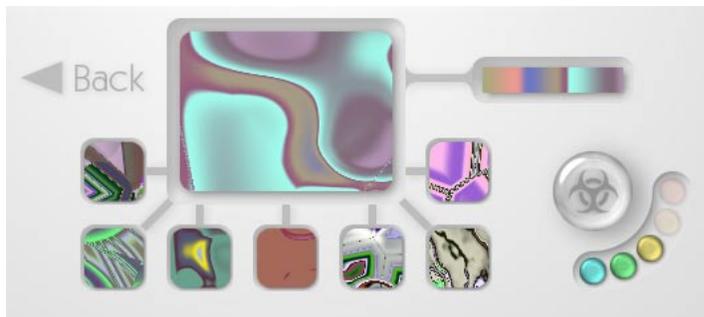
Like all the other Preset Managers, you can load and save presets. More about this in the Preset section on page xx.



## the mutator

The Mutator, at the bottom of the room, functions like it's big brother Mutation Sliders in the Main Room. Clicking on the preview will generate variations of the current noise.

You can control the amount of variation by clicking on the buttons in the lower right corner. The closer you click to the highest (red) button, the more variation you will generate. The lowest (green) button will generate more subtle, slight variation.



[ this UI is for the Color Channel, but it looks the same for the Bump Channel, minus the gradient ]

## gradient editor

This is only in the Color Channel Deep Noise Room. It allows you to specify the overall color of the noise.

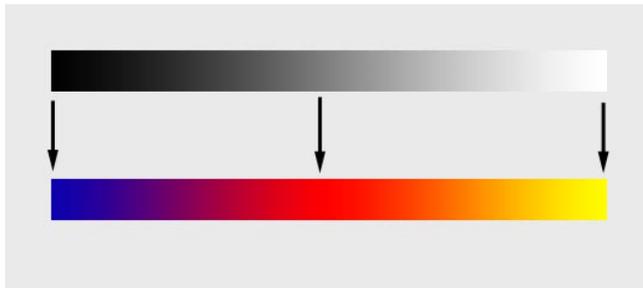
As with the rest of the gradients, it tends to generate too many color points if left to generate randomly. The Clear Points option, available from the drop down menu, is your friend, as are the presets.



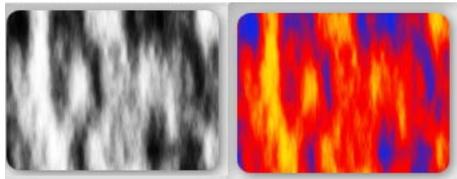


### a gradient example

The Gradient works by mapping colors to a grayscale ramp.



Notice that the blues are mapped to dark areas, reds are mapped to the middle grays, and yellows are mapped to the lighter shades.



Wherever the noise has the various shades of gray, it will take on the appropriate color. The result will give you something like this.

The dark areas become blue, the gray areas become red, and the light areas become yellow. If you wanted Black to remain blue, but wanted the darker shades to become green, you'd put a gradient point in between blue and red, that was green... and all the darker shades would become green, but not black or middle gray.

### back button

This takes you back to whatever room you came through to get to the Deep Noise Room. Usually this will be the Layer Room.

Alternately, you can also hit the 'ESC' key to go back.



Tiling Texture Anarchy (hereafter known as Tiler) is designed to create textures that seamlessly tile. What is a texture that seamlessly tiles? It's an image that can be repeated without any noticeable seams. This quality is useful in a number of scenarios.

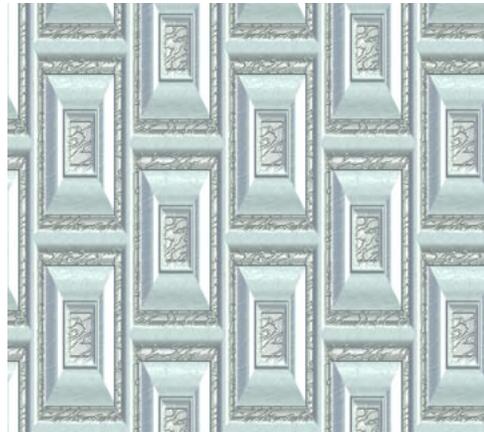
Tiling textures have many uses, but they aren't for everyone. There are plenty of folks who will use this all the time, and a lot more who will never have to leave TAE (TAE).

We've given you two filters with similar qualities, so you have more flexibility within each product. The downside is that you can't pull textures from one to the other.

### uses for tiling textures

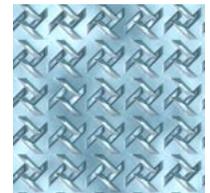
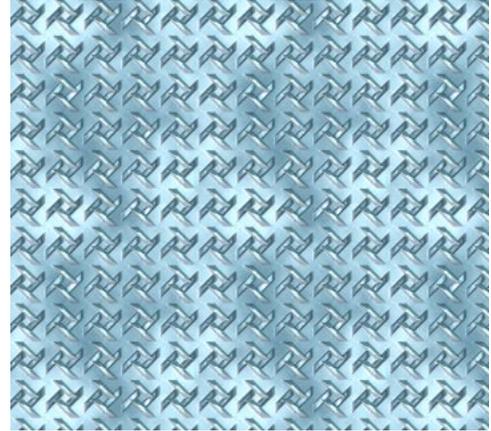
Who will use Tiler? And for what devious purposes? Well, we've thought of four major categories of people/tasks.

1. For 3D artists who need to keep their textures small. The filter allows you to apply the tile as a texture map and simply repeat it along the surface instead of creating a texture that is big enough to fit the entire object. This allowance can save on rendering time, and is crucial to the real-time games you are used to seeing... particularly for objects that you won't see the entire surface of at any one time.
2. For use as background textures. As you may have noticed, Texture Anarchy can be a bit slow to render. If you're creating a really big graphic and don't want to wait for Texture Anarchy (TA) to render out something that big, try using Tiler and use that as a pattern in your background. Especially if you have a bunch of other stuff over the background (text, design elements, etc), it won't be noticeable that the image is repeating.
3. For designers working with video or film. Large



images, as we've said, can be unwieldy both in how they can be animated and the rendering time they add to the project. Having a tiling texture can be useful for backgrounds and design elements that need to animate over a long period of time. Grabbing a tiling texture and using the Offset filter (in Adobe After Effects), you can move the texture for hours and never see a seam nor run out of it.

4. For artists using other filters, like Displacement Mapping. Tiling textures can produce better results. Filters like Displacement Mapping will repeat the source file it's using to create the effect as many times as necessary. This can create weird distortion along the edges. Since tiling images are seamless, their edges don't show and this is not a problem.

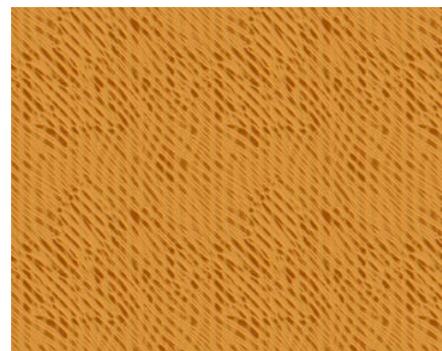
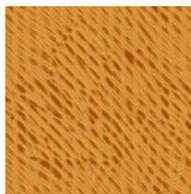


### why are tiler and tae separate?

Because of Tiler's special, seamless property in the images that it creates, it has some limitations. It doesn't have all the flexibility that TAE (TAE) has.

If TAE produced seamless tiles, it would need the limitations that Tiler has. You can't design a texture, click a magic button, and say 'Let There Be Tile'. We didn't feel it was fair to make everyone, including those that didn't want seamless tiles, to work within these limitations. So, we felt it best to split the two filters up.

Even if we did, when you went to make the beautiful texture you designed in TA into a tiling texture, it would be replaced by something different that fell within the limitations of what can be tiled.





## how does the tiling work?



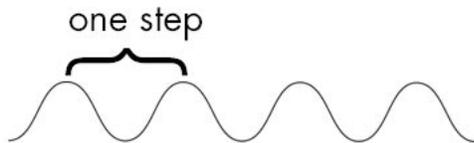
Let's take the example of a sine wave, which is a constantly repeating algorithmic shape.



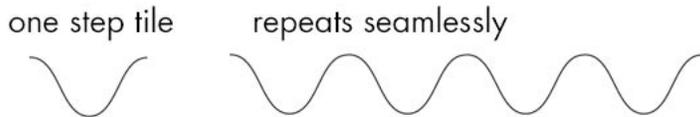
Even though it constantly repeats, we can't just arbitrarily cut out a section and expect it to be repeatable in tile form.

It is only repeatable when the cropped out section is in steps of the underlying frequency of the noise.

In the following example, we have four repeats of the wave giving us a frequency of 4. A step is an area from one section of a wave to the corresponding section of a second wave (say, jumping from one peak to the next peak).



To be repeatable, the noise has to be 'in step' and the section of the wave at the left edge has to meet up exactly with the section of the wave on the right edge.



Of course, it doesn't HAVE to be a single step. Two steps, three steps, 9 nine steps, or whatever can repeat without any problem. It just HAS to be a full step. No more, no less.

The Sine Wave is a pretty simple example, but it should get the point across. All the noise types have similar 'steps' that they have to be incremented in, otherwise you get seams.



### similarities between tiler and tae or, why we don't go over each feature of tiler

From an interface standpoint, the two plug-ins are identical. There would be little point re-explaining the Main Room or the Layer Editor Room here, as they're exactly the same as what you'll find in TAE. So we've only done this once.

The way the lights work, gradients, presets, the way the noises blend together in the Layer Room, Mutator, and basically the whole filter, except the transform controls (rotation, scale, etc.), are exactly the same.

We recommend that you become familiar with TAE before jumping into Tiler. If you do so, you'll find that you'll have a good understanding of what's happening and should be able to jump right in.

### presets that work and don't work

You can't just drag and drop presets - caution to the wind, hand through your hair - made in TAE with Tiling Anarchy.

Due to the limitations of Tiler, the Main Room presets simply wouldn't translate correctly. You'd end up with more work re-adjusting them it would take you to build something similar from scratch. So we've disabled that feature.

When we say 'scratch', of course, we don't mean you have to re-build entirely. You can use Light, Gradient, Layer, and Noise presets.

#### light and gradient presets

Light and Gradient presets will look exactly the same in any of the filters.

#### layer and noise presets

The Layer and Noise presets that you save out in either TAE or Edge will work just fine in Tiler. They will probably not look exactly the same, but they should be close in most cases.

Once you've loaded them in, Layers and Noises will be adjusted to fit within the limitations of Tiler. But you'll find the results will be similar. Going the other way, the Layers and Noise will look different in TA as well, when freed of the limitations of Tiler.



### cheat a bit

What you CAN move between the separate plug-ins provides an excellent way of, essentially, moving the Main presets around between them. Just save out all the necessary layer wells from the Deep Noise Room and Layer Editor Room layouts that compose your texture. Then load those presets into the other filter, and tweak what you need.

Be advised, the presets do require some cleanup work. For instance, if you are loading multiple Layer presets into the Layer Editor Room of Tiler, trying to recreate a texture from TAE. You'll need to remember blend modes, opacity, masks (these can be saved out as Noise presets), lighting, and other details.

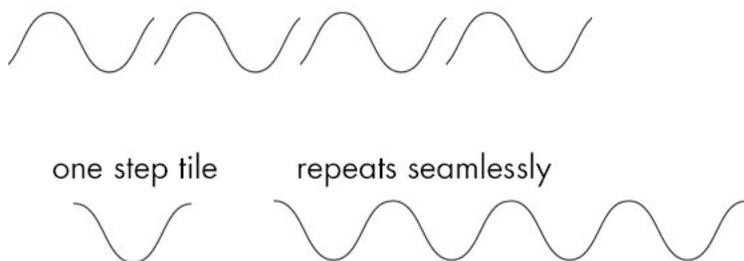
### the main presets

Right now you're probably asking why we can move the Layers and Noise types, but not the full texture as a Main preset.

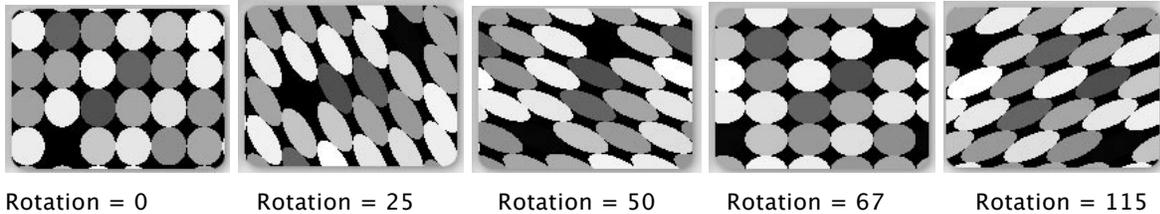
Well, the Layers and Noises are the basic building blocks for each filter. The final textures have a number of variables and other properties that are unique to each filter and it would be limiting to create a 'universal' preset.

### scaling and rotation differences

A main difference between the two filters is that Tiler's noises can't just be arbitrarily rotated, scaled, or moved. In TAE, you can transform the texture without any limitations.



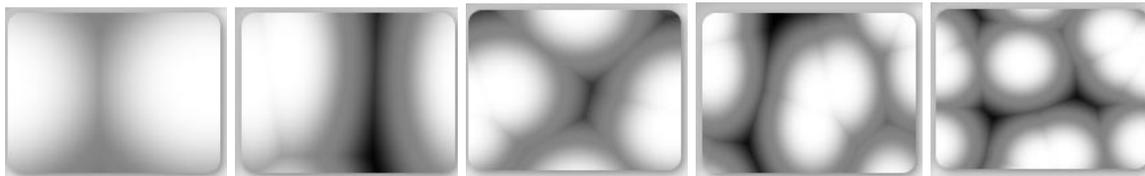
Because of the step issue, noises in Tiler can only be rotated or scaled in increments. Unlike TAE which can smoothly rotate or scale noise, the noises in Tiler 'jump' when rotated or scaled. For example, here's an instant of the Circles noise and the Rotation jumps it goes through when rotation 0 to 115 degrees. There are only 5 positions for this range, unlike TAE which would have 115 positions.



Note that the noise doesn't always do what we would expect it to do at a given angle of rotation. That's because the degree value doesn't really represent what's happening.

Take the noise at 67 degrees. That angle of rotation lasts from when the degree value is set to 67 until it hits 115. From 67 to 115 degrees the noise never rotates. The actual rotation value is 90, but at 67 the noise jumps to the 90 degree position.

Scaling noises has the same problem. Again, nothing scales smoothly as it does in TAE. Take a look at the following noises.



The Noise jumps between different scale amounts. Unfortunately that means you are stuck with whatever increments the noise type you're working with is going to give you. Sometimes it's only a minor nuisance, sometimes it makes the noise unusable.

This is why you should always start off in Tiler, if you intend to tile your noise. Starting a design off in TAE is likely to be a waste of time as you'll get the texture exactly the way you want it, but that won't translate to Tiler at all.



## multi-layered textures in the main room

One problem that the rotation, scaling limitation brings up is dealing with multiple noises at the same time. Not all noise types scale and rotate with the same limitations. Some are pretty flexible, some aren't at all.

For this reason, it's not advisable to do rotation or scaling in the Main Room for Tiler.

The Main Room has global controls. This means its Transform functions will try to scale and rotate all the noises at the same time.

Since each noise type has different limitations the controls in the Main Room give very inconsistent results as some noise transform one way and other noises transform a different way.



In TAE, the Main Room is great for little tweaks.

In Tiler, it'll most likely wreck your texture.

Notice that the brick texture scales down nicely (the Brick noise is pretty flexible even in Tiler) in all three images. In the first two, the Rose Petal noise that's creating the sand on top of the bricks hardly moves at all. The bricks have zoomed way out, but the sand still looks more or less the same.

Then in the third image all of a sudden the sand goes crazy. Sand is everywhere now. That's the problem with using the controls in the Main Room different noise types will respond differently giving you potential weird, unexpected results.

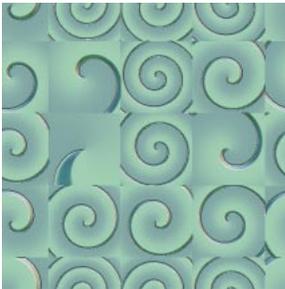
Really, all noises in Tiler should be adjusted in the Deep Noise Room. Transformations even in the Layer Editor Room can introduce unexpected results.



## untilable noise types

There are a few noise types that don't really work well in Tiler.

### 1 - spirals



Technically this noise tiles fine. However, due to its nature, Spiral has boxes around the spirals. Obviously this creates seams and if you're looking for seamless textures, that's not going to do. When the noise has seams built into it, you're in trouble.

You can still create a lot of interesting textures with Spirals, but just be aware that the box will cause seams.

### 2 - fissures and cracks



This noise repeats, but you can't zoom in on it. Thus all you get are little dots and lines.

Assumedly, you can use Fissures and Cracks for some things. But usually the results will be less than exciting.

and that's why limitations are good for you ;-)

Given the number of visual and technical results that tiling textures are useful for, it's still worth putting up with the limitations. Especially since anything you produce in Tiler will result in a seamless tile... er, tiling seam?

You can work creatively without sweating the calculations necessary to make a texture tile then or at some later time. And you can create complex, sophisticated graphics without worrying about render issues or time involved.



Edge Anarchy (hereafter known as Edge) is a filter that's designed to create textured, distressed, or ornamental borders around images and text. It doesn't quite have all the power of Texture Anarchy, but the power you do have is enough to apply an amazing variety of treatments to borders and edges.

Instead of three layers like you have in Texture Anarchy Explorer (TAE) you just have one layer in Edge Anarchy (Edge). The layer presets that you create in TAE can be used with Edge, so you can do all your texture creation in TAE if you want.

### the single layer model

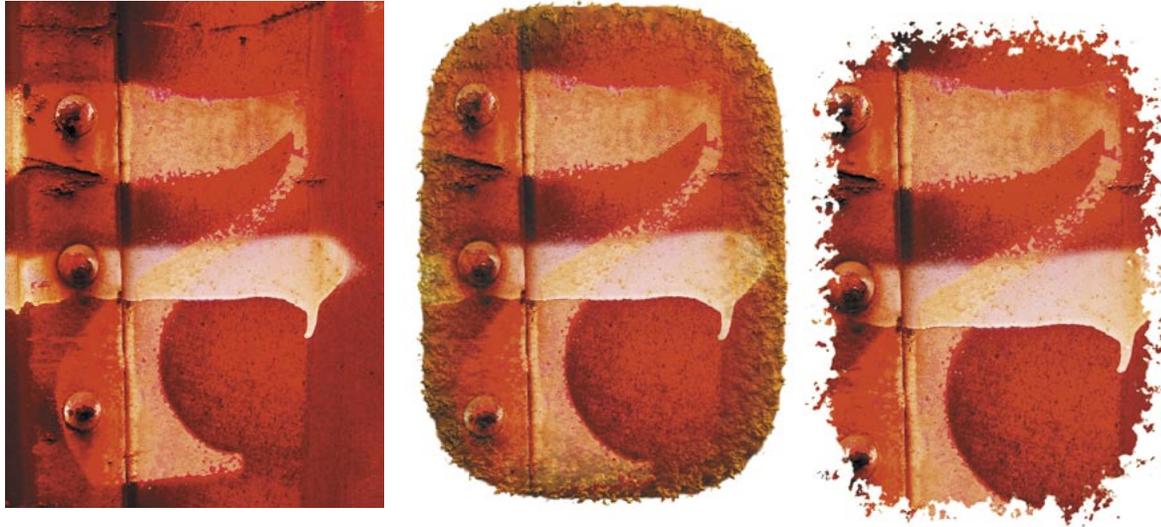
In the Main Room of Edge, you create texture out of one compositioning layer. This layer is then used to as a matte around the edge of the image or text.

The edge can be enhanced with a bump map, color texture, and lighting. In its simplest expression, Edge creates a basic distressed border based on the underlying texture. More complex examples have the image taking on the color and texture of the layer.

The edge is then manipulated with a variety of sophisticated tools. Characteristics that you determine include shape of the edge; width of edge; the influence of a bump on distorting the edge; and the amount of color.

### tip :: discarded areas

Edge will discard the portion of your layer that is outside the edge that is created. It is important that you work with a COPY of your image to avoid permanently losing that data.



[ left ] original image [ middle, right ] images with an edge

## a two room setup

The Color and Cutout (bump) channel that you see in the Main Edge room is more similar to the top layer of the Layer Room in TAE, than the color and bump channels in the Main Room in TAE. Clicking on either channel in Edge will bring you to the Deep Noise Room.

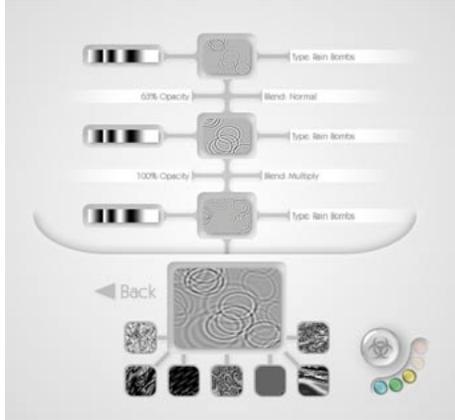


[ the two channels in Edge Anarchy ]



[ the top layer in the Layer Room in Texture Anarchy ]

The textures that Edge uses are not the multi layered textures that TAE creates, but the materials that make up the layers. This still offers a wealth of possibilities, but it is something to be aware of.



There is no Layer Room, and hence you can't mix together materials and masks to create the super complex textures that you'll find in TAE.

There is a Deep Noise Room. You can mix together up to three base noise types to create the Color and Cutout channel.

The Main Room in Edge is where the controls to create the border lie. The Deep Noise Room allows you to create the material that will be used as the basis of the border and defines the overall look, but the final tweaking will be done in the Main Room.

## blend modes

You can have the resulting edge effect composited with the original image. Usually, the Blend Mode is set to Replace. This replaces the original image completely with the rendered effect. If Blend Mode is not set to Replace, then the edge will be composited with the original image creating a 'picture-in-picture' sort of effect.

This can be very useful if the Edge Direction is set to Inwards. It creates a beautiful frame effect and the blend modes can really enhance it. Setting the Blend Mode to Difference can really create a different twist on the usual edge when Edge Direction is set to Inward.



for a full explanation on Blend Modes, please see Appendix A for a list, and the specific sections on them

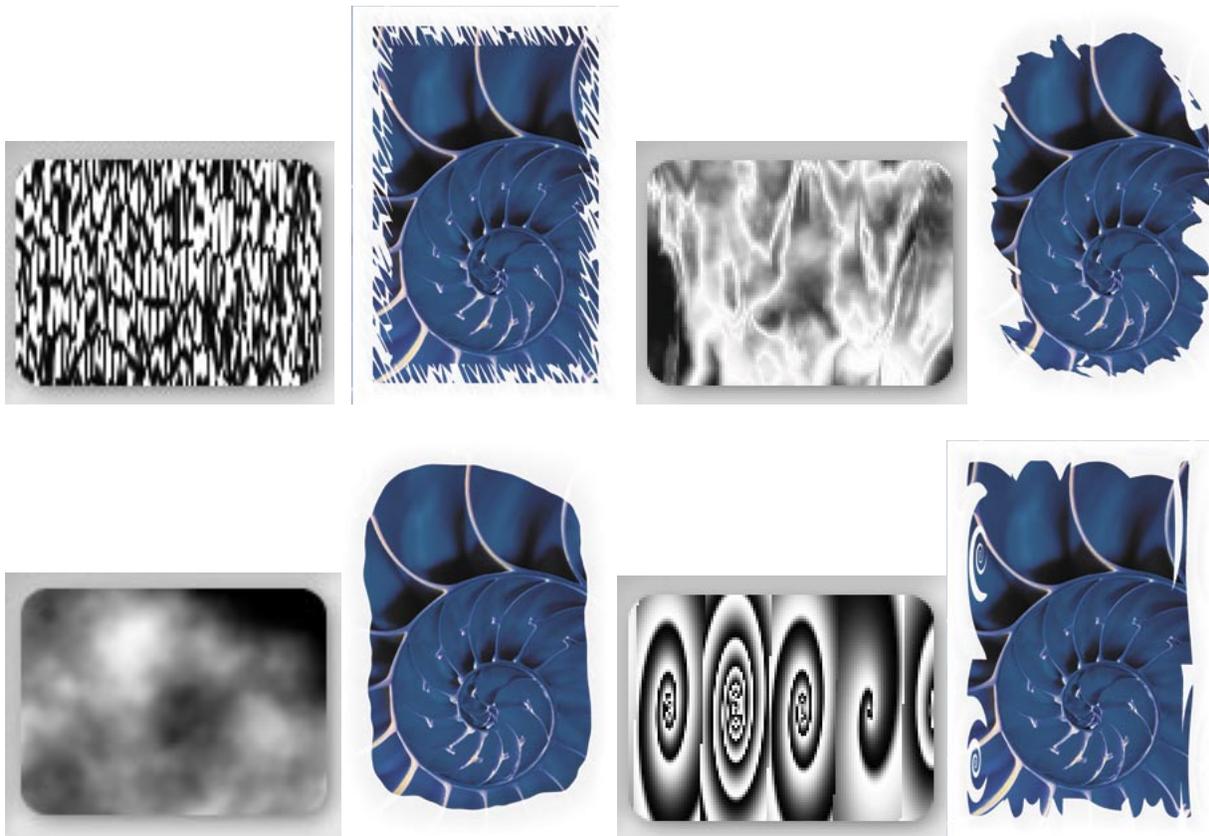
## opacity

Opacity simply lowers the opacity of the edge image to blend in with the original image. Setting this to 0, will result in the edge disappearing completely.

## cutout channel

The Cutout Channel is different than any other channel. It provides a material that will be used to mask off the image in such a way that an edge is created. The variations in the edge will be caused by the shades of gray, particularly black and white, in the material.

The edge that is created is affected by the Edge Size and Falloff Gradient, but owes most of its look to the Cutout Channel.



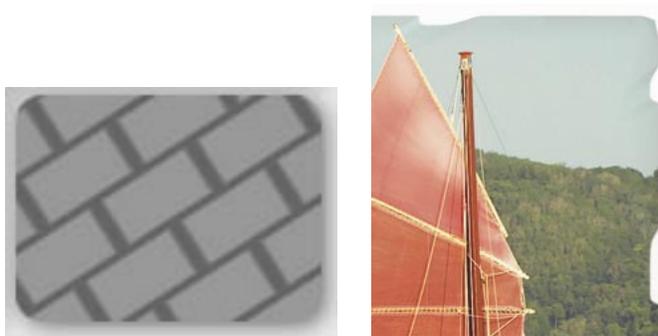
[ a few examples of Cutout channels and the edges they create ]

## grayscale appreciation

In the Cutout Channel, black tends to cause more distortion and results in the 'eaten away' parts of the image. Since white areas are less likely to be eaten away, it will appear as if they cause the image to stick past the border. Shades of gray will cause the image to be eaten away or stick out depending on their lightness values.

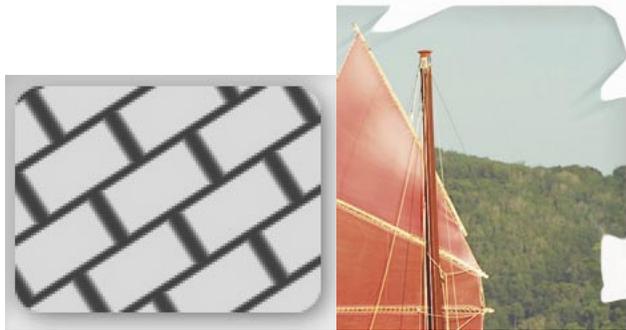
Black and White are always the maximum, but darker shades of gray will result in the image being eaten into, while lighter shades will result in bits of the image sticking out. As you get closer to 50% gray (neutral gray) the effect starts to diminish towards nothing.

Clear as day, right? Er... ok, a cloudy, gray, raining day. Let's try some visual examples.



### an example

The Edge Size determines how much area around the original image is removed, but the shades of gray determine how far, in one direction or the other, the image will be distorted. The higher the contrast in the Cutout material, the more distortion you'll see in the border.



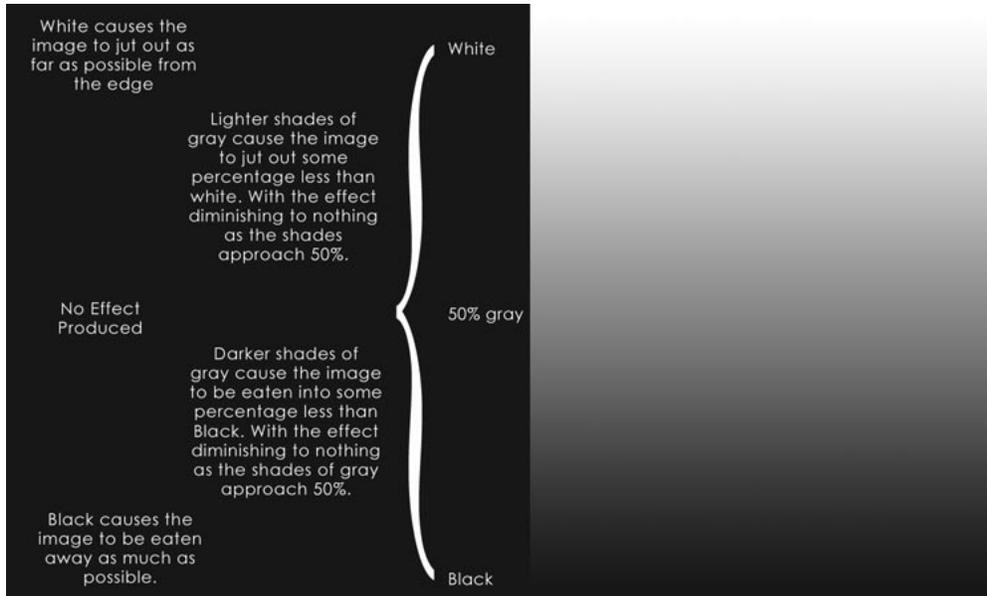
This may or may not clear things up... but with some playing around it should become clear how it all works.

### a big difference

One big difference between the Color and Cutout channels and channels everywhere else is that you can't turn them off by Alt/Option+clicking. In fact, there's no way to turn the Cutout channel off at all, although, you can turn Bump Mapping off, which will eliminate the shadows and highlights caused by the lights.



Since the Cutout channel causes the edge, if you turned it off there'd be no edge. Which would sort of defeat the purpose of the filter.



## bump mapping

Bump mapping is the technique for artificially creating a sense of depth. If you've ever applied a bevel to something you've used bump mapping.

Basically, it involves putting a light somewhere in your scene and then generating highlights and shadows on your texture based on the position of the light. Obviously, this means that the bump mapping in Edge Anarchy is highly dependant on the lighting controls (explained on page xx).

Since the lighting model in Edge Anarchy is pretty complex, with four lights, 3D space, and explicit control over highlights, how the bump mapping works can get a little tricky.

## use of light

For the purposes of the following example, we'll use a single light set on the horizon in the upper, left corner. This will give us nice well defined shadows and highlights.

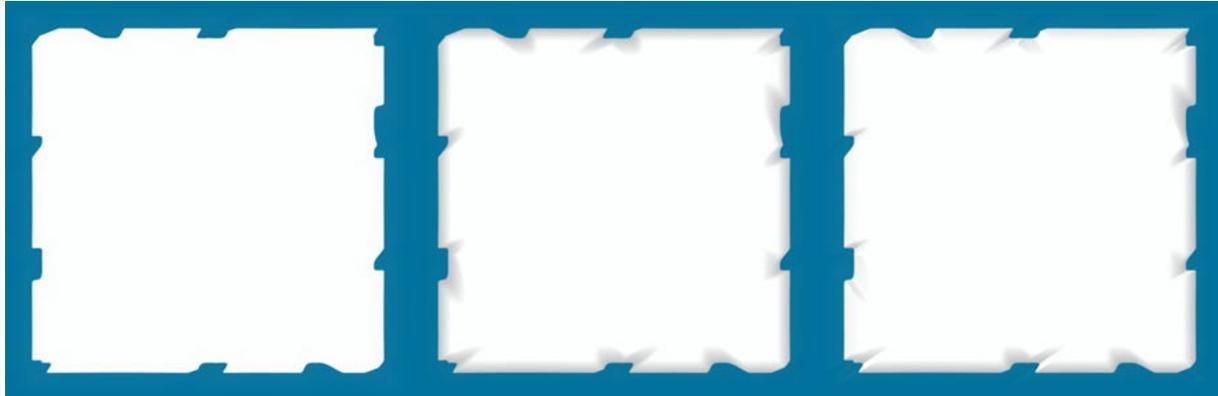
We'll get bright, blown out highlights in the upper, left corner (no shadows), and shadows everywhere else.





## three bump modes

There are really just three modes for bump maps in Edge. 100% bumping, 0% bumping, and no bumping, with all of it turned off. Examples:



no Bump

Bumping = 0

Bumping = 100

Notice that when Bumping is set to 0, there's a shadow all the way around the edge. When set to 100, there's a highlight in the upper left corner and shadows in the edges facing away from the light source.

You can go between 0 and 100% bumping (see the Bumping section) and get something, well, inbetween, but those are the three base states. Adding more lights will create more complex lighting models. You can easily create a situation where there are no shadows, or the shadows take on a particular color. But that is discussed in the section on Lighting.

## apply/don't apply bump switch

By default, Edge is set to apply a bump map. You can turn this off by clicking the Apply/Don't Apply Bump switch. When it shows 'Apply Bump', bump mapping is turned on, when 'Don't Apply Bump' is showing, bump mapping is turned off. Whew, something simple.



Notice that in the above image bumping is set to 50%. This will have no effect on the image, since Don't Apply Bump is selected. You can move bumping all over the place and it won't have a bit of effect. However, if you switch Don't Apply Bump to Apply Bump, then the bump mapping will kick in.



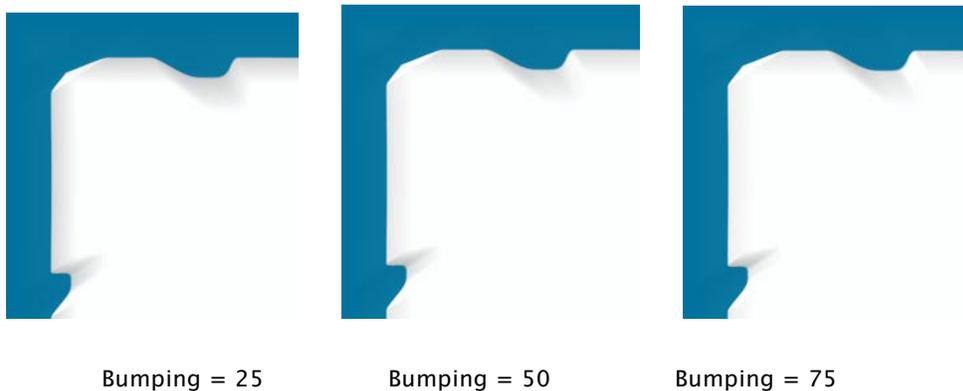
## bumping control

Admittedly, this behaves a little odd, but it does expand your shading options a bit. If this is set to 100% it behaves as expected, giving you shadows, highlights, and all the complexities involved therein. However, if you set it to 0%... there's still some shading going on. What gives?

If this is set to 0%, then an even shading is created all around the edge. Take a look at the Bumping samples at the top of the page to see what this and 100% bumping look like.

This creates a nice border for the edge and doesn't take lights into consideration. It can be a useful visual effect that can be a bit difficult to set up with lights.

Setting this somewhere between 0 and 100 has the effect of pulling the highlights back a bit. As you lower the value, the automatic shading is increased which has the effect of adding some shading into the highlight areas that might otherwise be blown out.



## color channel

This works like the color channel in the other filters. It's the color of the edge.

Whether this has any effect is highly dependant on the Edge Size and Falloff Gradient. The Falloff Gradient generally has to have some white values in the first half of the gradient for the Color Channel to appear.

[please see the section on the Falloff Gradient for more info regarding Color Channel](#)

The edge will take on the colors in the Color Channel and blend it with the original image. The amount it blends is set by the Edge Size. Depending upon how this is set up, the Color channel can have almost no effect, a subtle effect, or it can completely overwhelm the original image.

Of course, you can turn the Color Channel off completely by setting Tinting to 0%.



[ these were created by varying the Edge Size and Falloff Gradient, with Tinting at 100% ]

### tinting gradient

You can adjust the colors here by making changes to the Tinting Gradient. This functions like the Gradients in other sections. You can add, delete, move, or otherwise modify the color points. You can also load or save presets as usual from the Gradient Editor.



### tinting

This sets the influence the Color Channel has on the color of the edge. If this is set to 0, then the Color Channel has no effect.

If Tinting is set above 0 then it will be blended with the colors in the original image. The higher the amount this is set to, the more influence the Color Channel has on the edge color vs. the color from the original image.

Even with Tinting set to 100%, the Color Channel doesn't always play a role. You can use Edge Size and Falloff Gradient to remove the edge color, and with it, any role the Color Channel plays.



The edge color only affects a certain portion of the Edge Size. If you use the Falloff Gradient to have the edge end before it gets far enough out to be effected by the edge color, then you won't see any edge color.



[ examples of just using the Falloff Gradient to get rid of the edge color ]

### tinting blend modes

This allows you to select the blend mode you want to use for when the Channel Color blends with the original image along the edge. This gives you all the standard blend modes that are available in the filters.

In many cases you can increase the saturation of colors or the effect of the bump map by changing the Blend Mode. If the edge doesn't quite have the 'punch' you were looking for, try using something like Overlay or Procedural, or even Difference.

For a run down of all the blend modes, please refer to the section specifically on them.

### Channel Lock

If this is turned on, then both the Color and Cutout Channels will move in sync if you rotate, scale, or re-position them.

Even if this is not turned on, if you manipulate the texture in the main preview window, the Color and Cutout channel will move together. The lock only applies to manipulations in the Color and Cutout wells, not the main preview window.





## edge size

Edge Size is one of the critical controls for Edge Anarchy. It defines how much of the image will be blended with the edge. Or, probably more correctly, how much of the image will be taken over by the edge. It is known that edges have a voracious appetite. It is up to you to control them.

Or so said Edgewise the Bear, until a disgruntled edge caught up with him and ate him. Nasty business this edge wrangling stuff. But I digress.

## percentages

Edge Size is set in percentage and the higher the percentage, the more the edge can take over the original image. If you set this to 100%, then the entire image is the edge's playground.

The edge will start off strong along the outside edge of the image and slowly blend with the original image. This blending may happen over a short distance (a low percentage) or the blend may go all the way to the center of the image (100%).

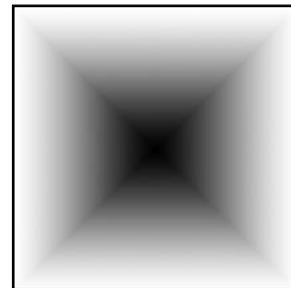
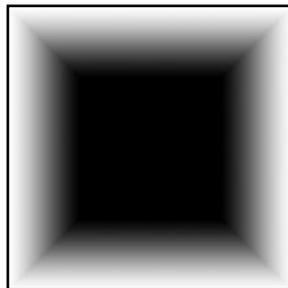
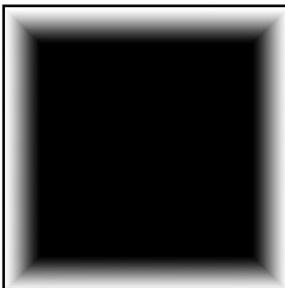
## falloff gradient

Edge Size is strongly affected by the settings of the Falloff Gradient. The two controls work together to create the edge, so they are inseparable to some degree. Keep in mind that you'll need a good understanding of both Falloff Gradient and Edge Size to understand what's going on with your edge.

## an example

Let's take a look at this via visual example.

For all intents and purposes, the Edge Size creates a square or oval gradient (depending on what Edge Type is set to). Where it's white, the Color Channel shows through, where it's black the original image shows, inbetween they blend together.





As you increase the percentage the inside black square gets smaller, reducing the amount of the original image that is left unblended. While the texture technically goes into the center of the original image at 100%, the blend at the center is so light that you'll never be able to see it. For that reason the texture will always fade out before it gets close to the center.

Sometimes adjusting the Tinting Blend Mode will cause the edge to dominate slightly more in the blending and the texture will become a bit more prominent towards the center. However, this causes other changes in the image so may not be desirable.

## edge type

The options here are either Gaussian or Voronoi. This is fancy naming for 'oval' and 'square'. This is fairly simple and a couple images should spell out what's going on.



## edge direction

This sets whether the edge is calculated from the inside going out (Outward) or outside going in (Inward). To create a normal edge on an image, you'll want to have Outward selected. If you're looking to create a frame, then Inward is more your speed.

Again, a couple examples should give you an idea of what's up. Pretty simple, huh? Deceivingly so... wait... there's more!



While by itself Edge Direction is simple, combining it with Blend Modes can yield interesting results. Particularly the Difference blend mode when used with Inward. This creates a very Outward appearance, but different.

## examples

Look at the normal Outward image here. You'll notice the shape of the oval. It looks like an oval block with hack marks in it. There doesn't really appear to be any marks outside the oval.

What if we want our hack marks going in the other direction, extending beyond the oval?

There is a none too obvious solution to this. Set Edge Direction to Inward, and set Blend Mode to Difference. You will end up with something that looks like this.

This little technique can be used to create all sorts of effects, from the 'looking out a broken box' effect which is going on here, to much more painterly effects, where the texture looks like paint strokes.





### difference mode

The downside to this is that you can't maintain transparency around the image. It always ends up with a black border, due to the Difference blend mode. As with all blend modes, Difference compares the pixels of the original image with the edge we've created and returns a result.

If the pixels are the same, the result is black, which is why around the edge everything is black. If they are completely opposite, then the result is white. Where one image is transparent... nothing happens and the other image shows through. This is why the image looks normal in the center. There's nothing to compare it to, so it comes through untouched.

It's a pretty neat effect and can create some great borders that would not be possible any other way.

### falloff gradient

This function is probably the hardest thing about Edge Anarchy. The Falloff Gradient controls where the edge stops, by controlling its transparency.

The gradient goes from left to right and controls the transparency from the edge to the center accordingly.



If you laid the gradient on top of the preview window, it'd look something like this.

The exact effect the Falloff Gradient has depends on numerous things such as the Edge Size and Cutoff Channel contrast. It does not work in a vacuum, so the best way to understand it is to experiment with it using different Cutoff materials and different Edge Sizes.

It would be impossible to go over all the various combinations in this manual so we will only go over a few. Hopefully that will give you enough of a head start that you can experiment and get a full idea of how everything works.

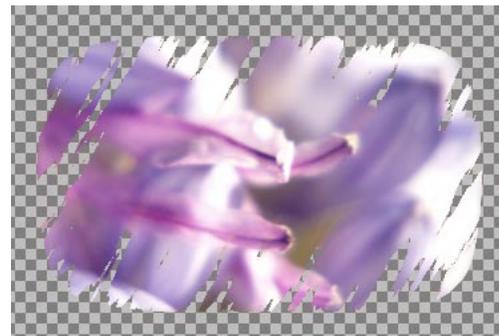
## getting started

When you launch the filter, the Falloff Gradient will look something like this.



The black and white are close together indicating there's a hard edge. Since the seam is about in the middle of the gradient the result is that you don't see too much of the Color Channel and the image isn't too distorted by the Cutout Channel.

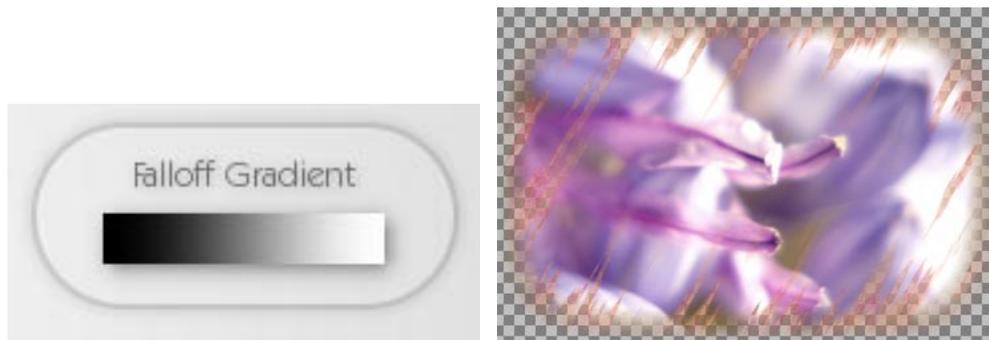
If the seam is close to the left edge, much more of the Color Channel is visible and there is very little distortion. If it's close to the right edge, there's very little color and a great deal of distortion.





The more white you have in the image the more of the original image you'll see. White specifies the 'opaque' area of the edge. Black causes the edge to be transparent, which is why when they're next to each other they create a hard edge between the transparent areas and the opaque areas.

If the black and white points are spread apart, the edge will have a soft falloff and will look blurry or have a glow to it.



A softer edge will show more of the Color Channel as well. When black and white are right next to each other, the filter tends to see things in black or white. Either you're going to get a lot of color or a lot of distortion.

When there's a good range of gray shades, the Color Channel is blended more, but only partially. You don't end up with vibrant colors. The same with the Cutout Channel, you don't end up with the hard distorted edges that you would get if black and white next to each other. The result is much softer.

## multiple gradient points

The Falloff Gradient is a normal gradient that's limited to grayscale values. However, you can have as many points as you want. This opens up all sorts of possibilities. Remember that wherever there's black in the gradient the image will be transparent, wherever there is white the image will be opaque.

So what happens if we create a gradient like this?



You got it... this creates rings! Wherever the white bands are the image will appear, wherever black is, it'll be transparent. The Falloff Gradient gives you a lot of power to manipulate the edges.



Here's another example using soft gradients creating a ripple effect.



## what about edge size?

Yes, it's true... size matters (we've been waiting all manual to say this). All of the above examples were created with an Edge Size of 70%.

The Falloff Gradient only affects the edge, and the size of the edge is determined by Edge Size. Decrease the Edge Size, and you'll decrease the area over which the Falloff Gradient has control. Here's the ripple effect from the previous example, with Edge Size set to 40%:



Notice that the ripples are still there, but they cover a much smaller area and much more of the original image is visible. If you were to increase the Edge Size, then just the opposite would occur. The ripples would be bigger and there'd be less of the original image.

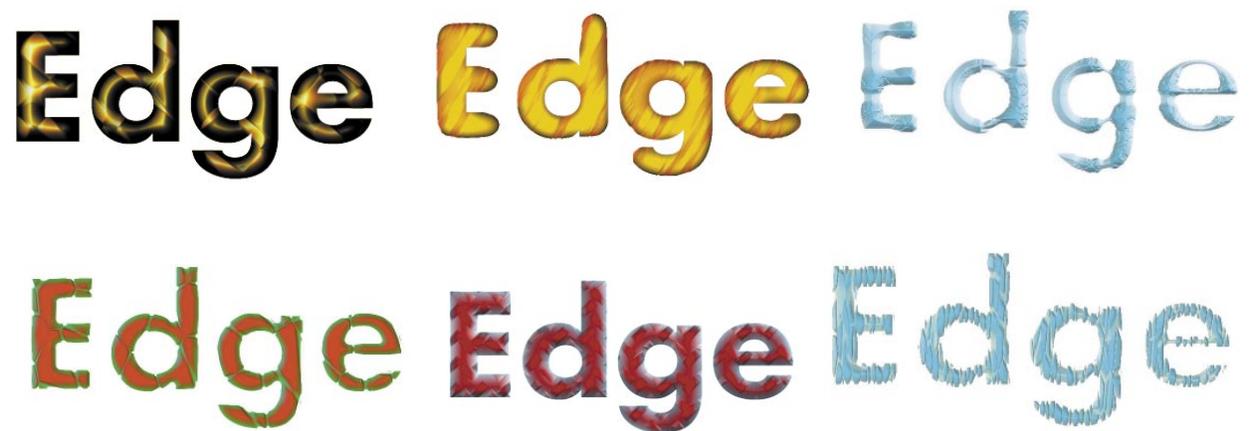
There are an almost infinite number of combinations Edge Size and the Falloff Gradient can have. We can only give you enough information to encourage the experimentation is necessary to fully figure out all the intricacies of this filter.

## cool text effects



### use with text

You can apply Edge Anarchy to rasterized text too! It works the same way as everything else, just select the text layer and apply the filter. Here's a couple examples of some great effects you can get from the presets.





Blend modes allow you to combine shades of gray and colors together. There is usually a base color (what you're starting with), a secondary color you are blending with the base color, and a resulting color.

Blend Modes compare images on a pixel by pixel basis. Meaning the color of one pixel (the base) is compared to the color of the pixel directly above/below (secondary) it on a separate layer. This produces a result and the pixel on the upper layer takes on the color of the result. For example, if you Multiply a white pixel (base) with a black one (secondary) you get a black pixel (result).

### where you use 'em

There are two areas where you'll be using Blend Modes. One is in the Layer Room and the other is in the Deep Noise Room. Only in the Layer Room will you have to be worried about blending colors and then only in the Color Channel. The Deep Noise Room and Bump Channel will only blend grayscale noises.

It is notoriously hard to predict how colors will blend together in most cases. Most people just flip through the blend modes until they find something they like. Since we expect this is how they will be used, we will focus on how the blend modes affect shades of gray. In truth, most likely you will just flip through the blend modes when using grays as well, but we'll give you some examples here so you'll have an idea as to what will happen.

### why learn them

It is important that you come to a decent understanding of at least some of the modes. Specifically Add, Multiply, Screen, Overlay, and Difference. These tend to be the most useful and are not too hard to figure out. It's beneficial to understand how to tweak the shades of gray to improve the results when using these. The only way to really understand them is to grab a bunch of grayscale files and start blending them together and see what happens.

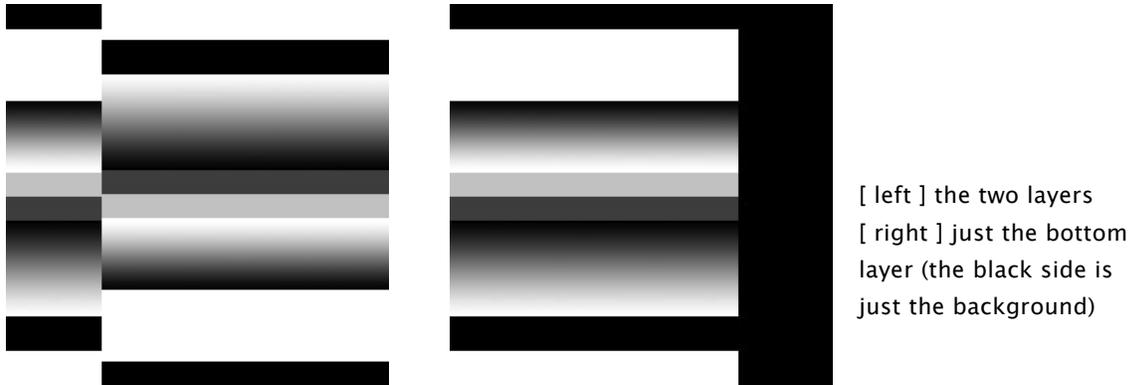
Those of you who have been using Photoshop since time began (pre-3.0) will have a head start here. Back when transparency was but a dream and drop shadows were laboriously chiseled out by hand, understanding channel operations (as they used to be called) was a necessity. Now these whipper snapper punks can apply dynamic drop shadows with the press of a button. Hrmph.

Actually, Amish designers still create drop shadows by hand using their specially modified, pedal powered Mac IIci's, so they will have a leg up as well.



### 1 – normal

This is actually not a blend mode. If a layer is set to Normal then it's not blending with anything. Anything underneath this layer will not show through.



### 2 – on top

This is only useful if a layer is not the topmost layer and you want it to be without having to move it. This operates like Normal. If you set a layer to this mode, you won't see any other layers as this will be the top, completely opaque, layer.

### 3 – behind

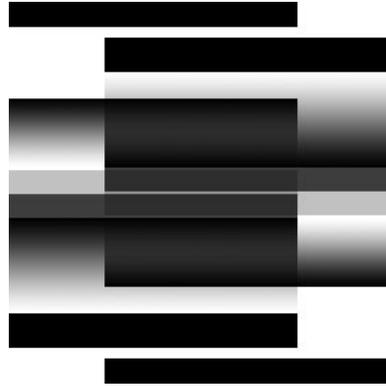
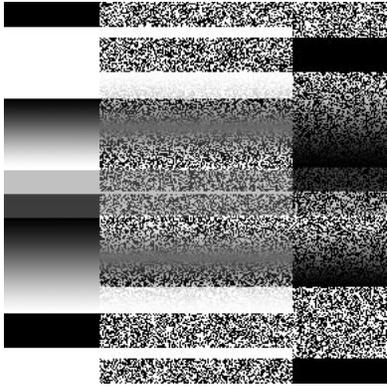
This puts the layer behind every other layer. If there's no blending or transparency on the layers above it, Behind will cause the layer to disappear from the blend.

### 4 – replace

Replaces any layer below it. Essentially the same as Normal, except Replace ignores any Layer Masks applied. Change the blend mode to Replace and you obliterate the layers below it.

### 5 – dissolve

This generates random transparent pixels based on the layer's opacity. The lower the opacity the more transparent pixels you'll see. However, it looks like transparent noise, since the pixels that become transparent are random. The image has the top layer set to 50% opacity. At 100% opacity there is no effect.



[ left ] dissolve  
[ right ] multiply

### 6 – multiply

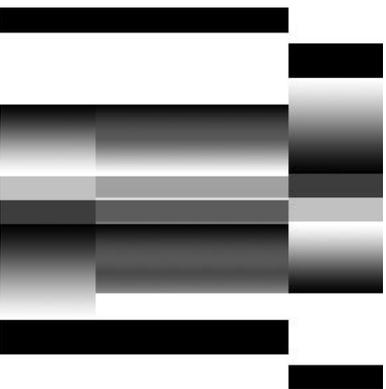
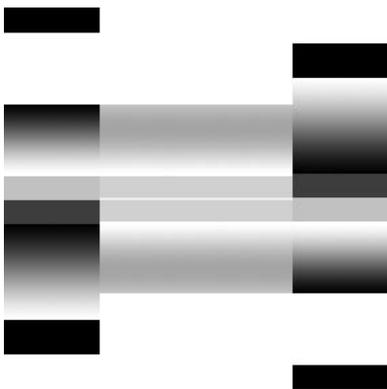
Multiply scales down the color (darkens) of one image based on the values of the other image. This always results in a darker shade, and Multiplying will cause your image overall to get darker. It's useful for adding shadows or shading to an image. Multiplying any color with black results in black. This also has the sometimes useful effect of causing white to drop out unless it's over another white pixel. White compared with any darker shade will result in the darker shade.

### 7 – multiply norm.

Normalizes the output so that the result is not quite as dark. Lighter areas multiplied with lighter areas won't tend to go dark.

### 8 – screen

Opposite of Multiply. Color values are scaled up based on the values of the secondary layer. This results in a brighter image and causes black to be dropped out unless it's over another black pixels. Black compared to any lighter shade will result in the lighter shade.



[ left ] screen  
[ right ] overlay



### 9 – screen norm.

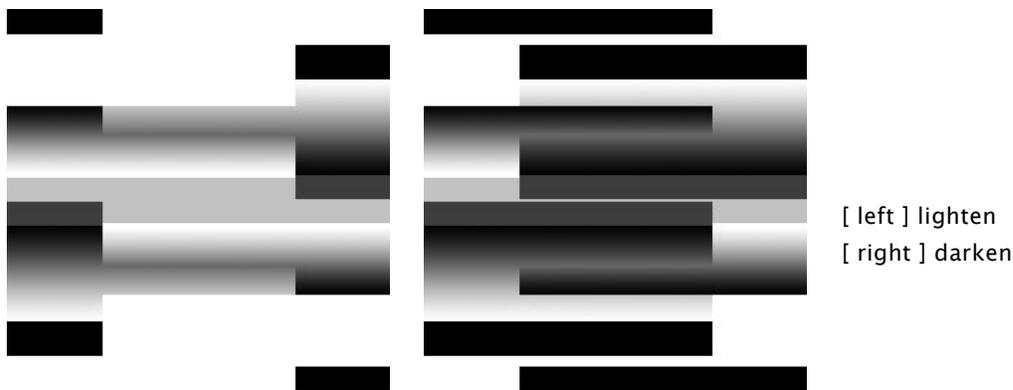
Normalizes the output so that the result is not as light.

### 10 – overlay

A combination of Multiply and Screen. Dark areas in the top layer will darken the colors below it, Light areas in the top layer will lighten the layers below it. Layer order does matter in this case.

### 11 – lighten

Compares the base and secondary pixels. Whichever is lighter is the resulting pixel.



### 12 – darken

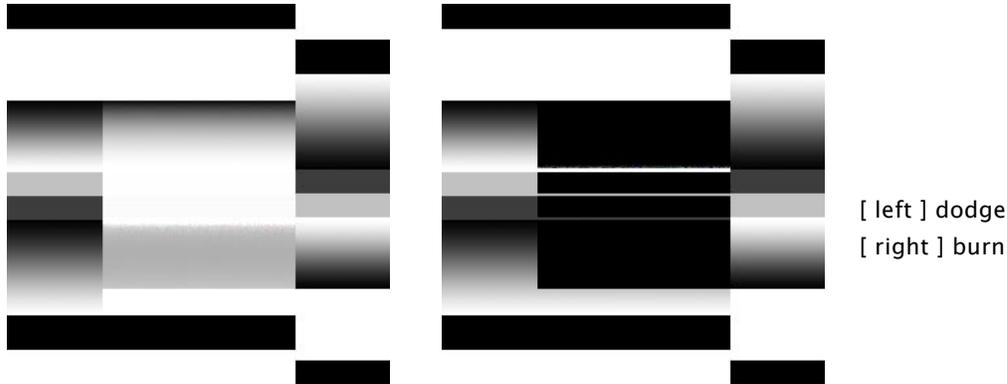
Compares the base and secondary pixels. The resulting pixel has the color of whichever one is darker.

### 13 – dodge

Dodge brightens the underlying layers pixels based on the values of the top layer. The brighter the top layers, the more extreme the effect. Layer order matters on this one. Different from Screen in that layer order matters and Dodge will result in brighter, but less blown out, images.

### 14 – burn

Opposite of Dodge. Darkens the underlying layer based on the values of the top layer.



### 15 – soft light

Layer order matters. Lighter shades (above 50% gray) in the top layer will push shades in the bottom layer brighter, darker shades (below 50%) in the top layer will push bottom pixels darker... but never to fully white or black. However, any black or white pixels in the bottom layer will remain as such. 50% gray has no effect.

### 16 – difference

Subtracts two pixels, with the added feature that the colors will 'wrap around'. This means it's not clipped at black. If you subtract 100 from 0, instead of 0 (because of clipping) you end up with 155 gray. How so?  $0 - 100 = -100$ , however that wraps around to 255 gray (solid white) and is then subtracted, resulting in 155 gray. This also has the effect of producing black if you compare two pixels that have the exact same color (subtracting the same color from itself) or producing white if you compare pixels with opposite colors.

### 17 – difference inv.

Produces the opposite effect of Difference. Adds the pixels together, with the same wrap around effect.

