

Adobe Photoshop

Introduction

Exercise 1



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Course and Document Description

Adobe Photoshop Introduction

Exercise 1

We will use Photoshop to restore the original colors and sharpness to a scanned image.

We will learn to use the following:

-Layers

-Image Adjustments using Levels, Selective Color, Crop Tool, Zoom Tool, Eyedropper and Sharpening

This workshop is very much a hands-on experience. A poll of user experience is taken before class begins, and materials covered may change based on this information. In trying to accommodate the needs of the class, each class will be slightly different. The core, however, is contained in this document. This handout is a companion to the material covered in the full workshop.

The exercise in this document is taken directly from the class, and, by completing it, you will have the basic skills necessary to participate in the Intermediate Photoshop course. This content is applicable to CS1 through CS5.

Photoshop is not an intuitive application. Learning to use it can be a frustrating experience. Knowing this, it is very important to play with images and graphics to get comfortable. This workshop series emphasizes practice, play, and exploration to strengthen your Photoshop skills.

We will use one file in this exercise:

creative_computing.psd

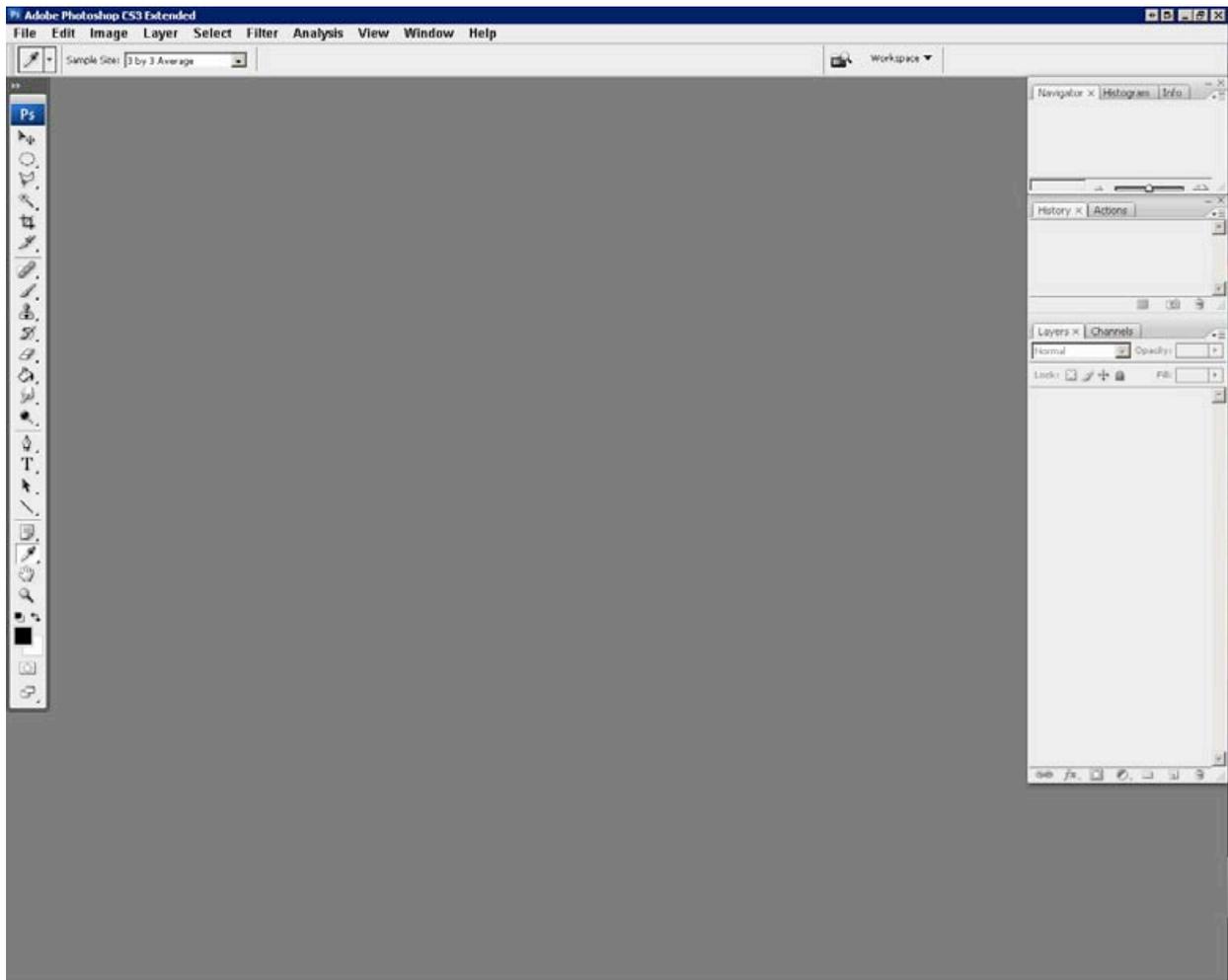
We hope you enjoy the workshop and the exercise in this document. Have fun, and don't forget to play!

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The Interface

In the OIT labs, the machines should be set to the same options. Photoshop should look like this:



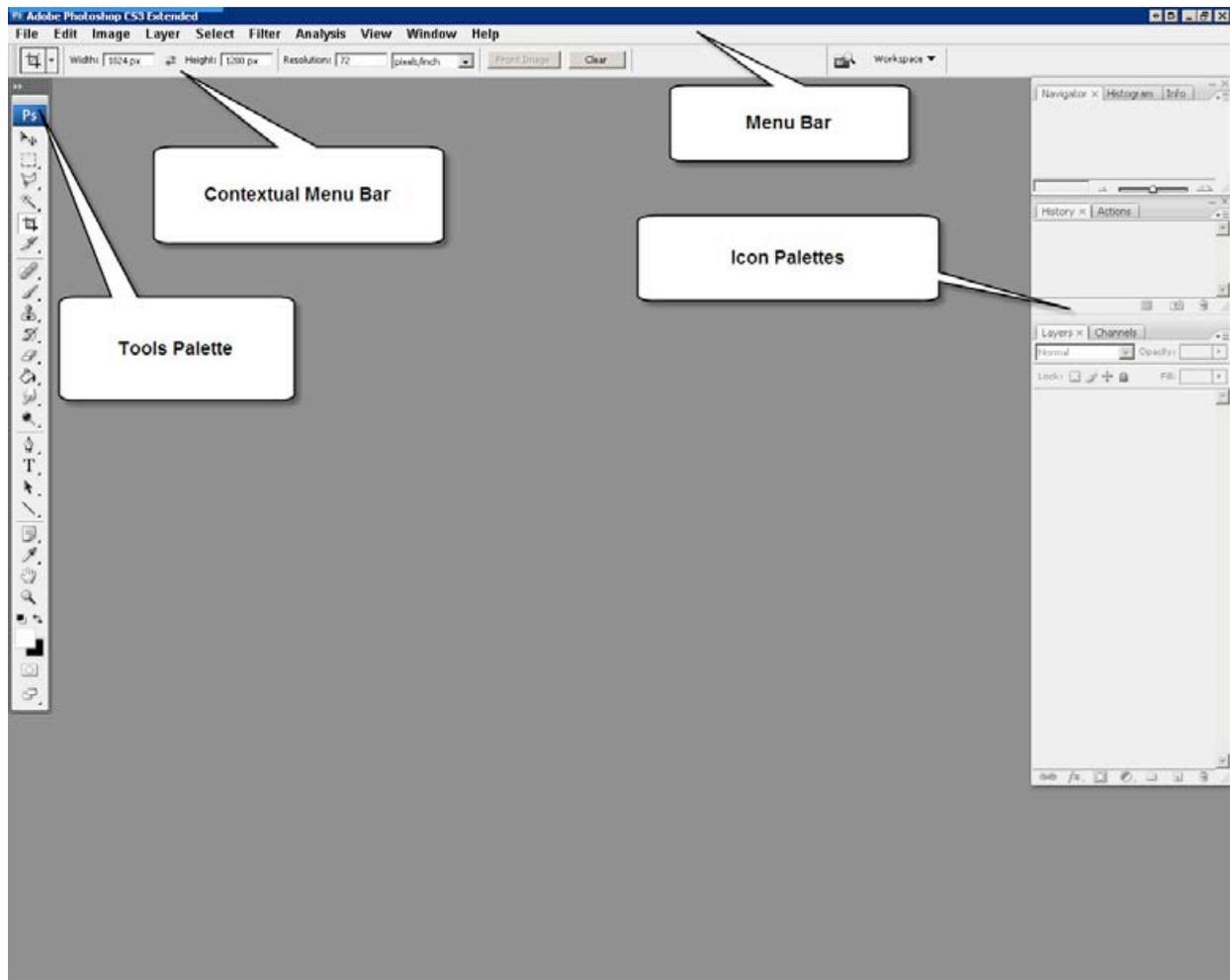
Those of you using previous versions of Photoshop will notice some slight visual differences. Don't worry! Everything is in the same general area. You shouldn't have any difficulty following this document.

If your screen is dramatically different, go to *Menu Bar > Window > Workspace* then choose *Basic* or *Legacy* (depending on your version).

Take a moment to scan the screen. Notice the layout.

Each section has a specific purpose, and (as we'll see later) Photoshop provides you multiple ways to access information, apply changes, and accomplish tasks.

Photoshop is divided into five main areas: Menu Bar, Contextual Menu Bar, Tools Palette, Icon Palettes, and the image window (not shown).

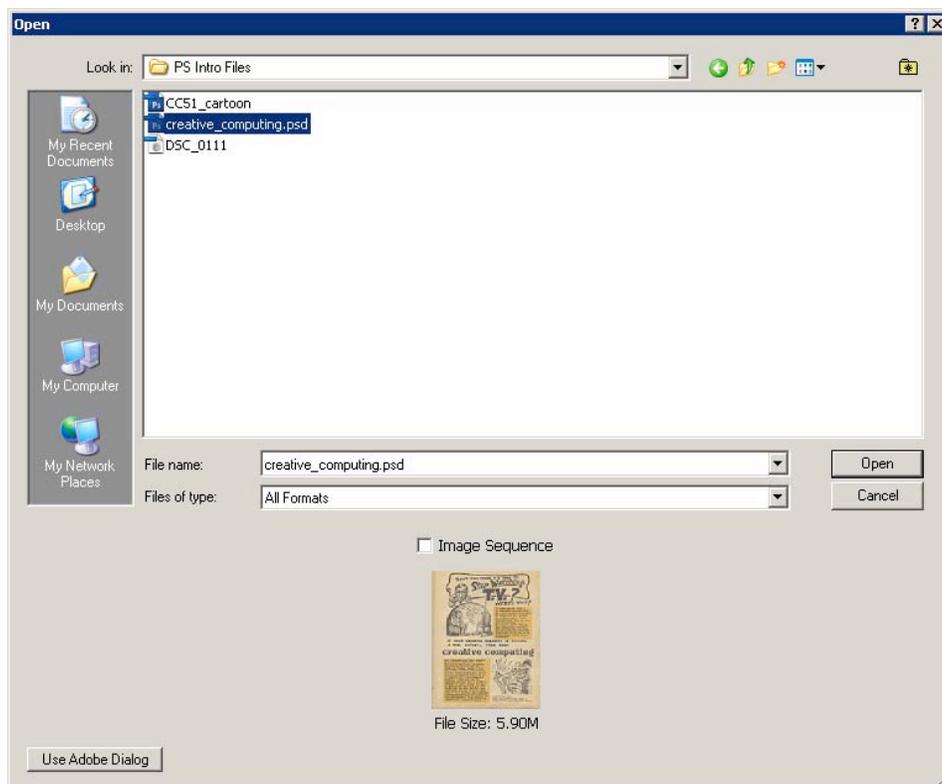


If you haven't explored Photoshop before, don't worry! We will only use a fraction of the tools and adjustments available to you.

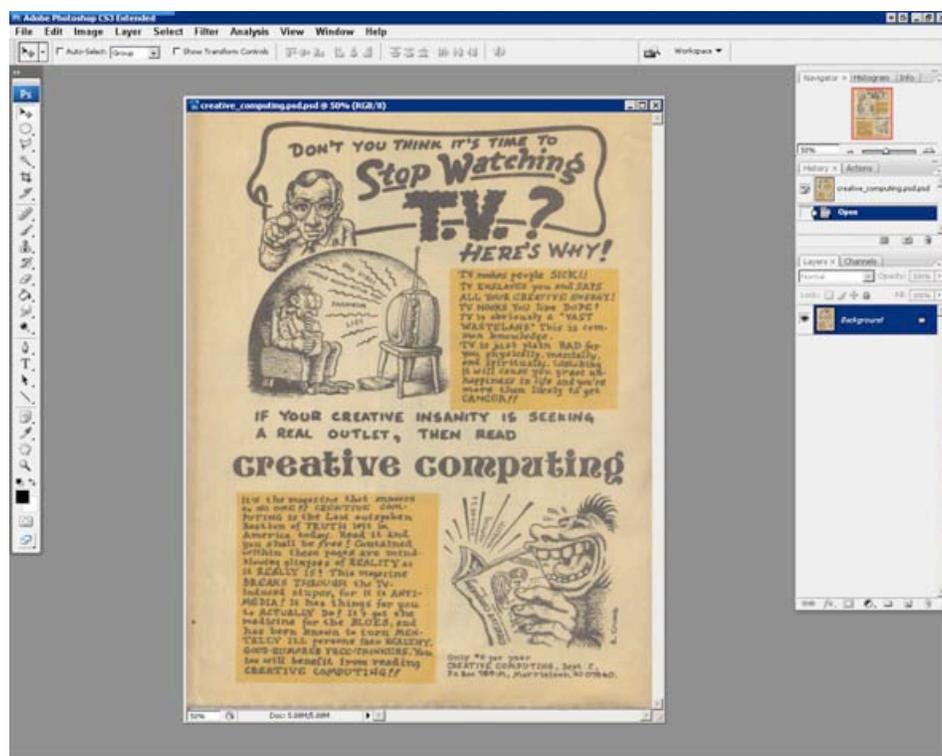
If you've experimented with Photoshop in the past, focusing on the tools and techniques in this workshop will help you experiment more effectively on your own.

Let's Begin!

Locate the image provided for this workshop by going to *File > Open*:



Once you locate `creative_computing.psd`, open it:



Notice the information displayed in the Image Window:



Layers

Photoshop's most powerful feature is its use of Layers.

Imagine you've painted a picture on a pane of glass. Layers are other panes of glass stacked on top of your original image (called the Background). Some of these panes may have other pictures on them; some may be frosted for effect, while others may be duplicates for redundancy.

The ability to stack effects and images, one on top of the other, and manipulate them separately is an incredibly powerful ability. This may be a hard-to-grasp concept for you now, but it will become clearer as the exercise progresses.

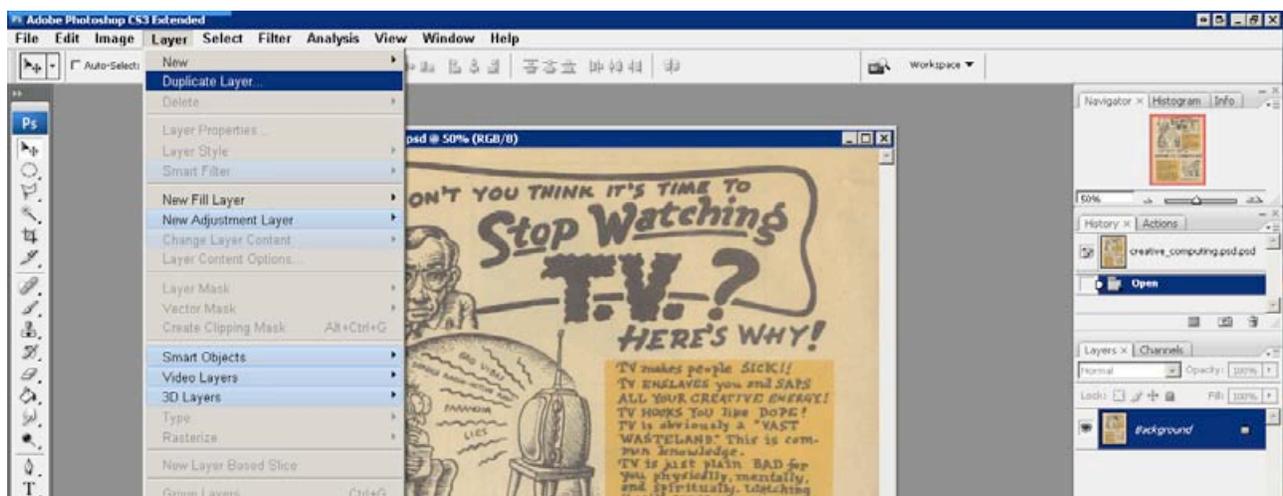
When you first open a file, it appears in the Image Window **and** in the Layers Palette as a layer named Background.

Important Note about Destructive Editing

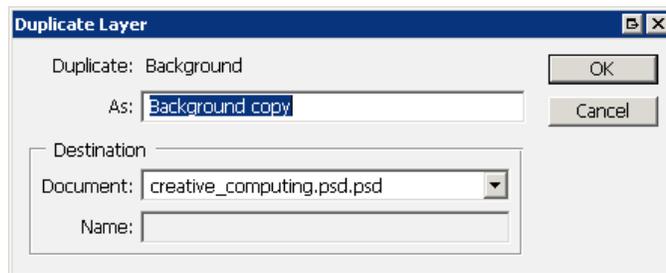
Any changes made via Tools, Image Adjustments, or Filters are destructive if applied directly to the Background. Every change alters, destroys, or adds information to the active layer. Therefore it is extremely important to not work directly on the Background layer when using Photoshop.

Duplicating Layers

Duplicate the Background layer by going to *Menu Bar > Layer > Duplicate Layer*.



When the Duplicate Layer window opens, the default duplicate layer name will be **Background copy**. Unless you want to name it something different, this name is perfectly acceptable for this exercise. Click *OK*:



The duplicate layer appears highlighted in blue above the original in the Layers Palette. The blue highlight marks it as the active layer. At this stage of the Photoshop series, we only apply changes to the active layer. The non-active layers are untouched.

You can see how the layers stack one on the other by clicking the open eye to the left of the Background copy layer. There should be no change in what you see in the Image Window.

Click to hide the eye on the Background layer. The image in the Image Window should disappear.

Click the square where the eye used to be for the Background copy layer to reveal. The image comes back.

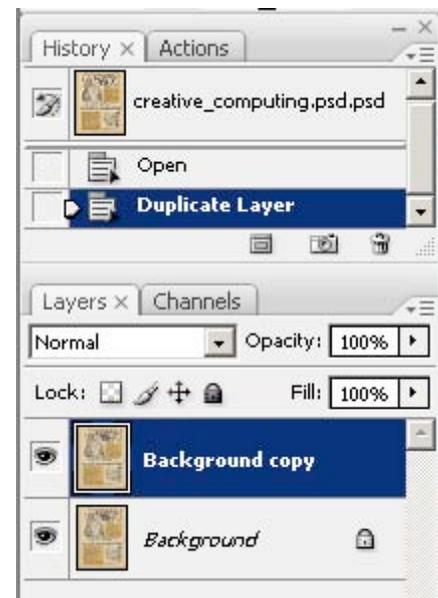
Click the square where the eye used to be for the Background layer to reveal. No change to the image.

So what's happening?

You are hiding and revealing two identical layers, stacked one on top of the other- nothing more. They are both 100% opaque. You can get the same effect by physically holding two identical items one in front of the other.

Take away the top item, and the bottom item looks exactly the same as the hidden one.

Put the top item back in front of the bottom item, then hide the bottom item. Everything still looks the same.



The Eyedropper Tool and Levels Image Adjustment

The image we're working on is from a late 1970's Creative Computing magazine. The artwork on this page was created by Harry Crumb. In an effort to improve this copy, we will make adjustments to remove the discoloration and attempt to restore the faded ink and sharpen the text.

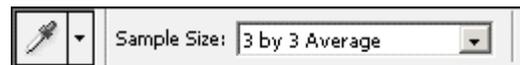
The Eyedropper Tool

The basic use of this tool is to sample colors.



Click on the Eyedropper Tool in the bottom of your Tools Palette (above the hand, and below the piece of paper). This tool is most often used to sample color for reference, or to help correct color. We're going to set a sample size for use in future adjustments.

In the Contextual Menu Bar under the Menu Bar, use the pull-down menu next to Sample Size to select 3 by 3 Average:



Each time we use the Eyedropper to sample something from now on, it will take a 3 pixel by 3 pixel average to determine what color we want. It is safer to use this setting for our exercise, since there is variability in the faded colors of this image.

In later exercises, if you need to sample a solid color, or a small bit of color within a larger swath, you may want to switch the Sample Size to Point Sample.

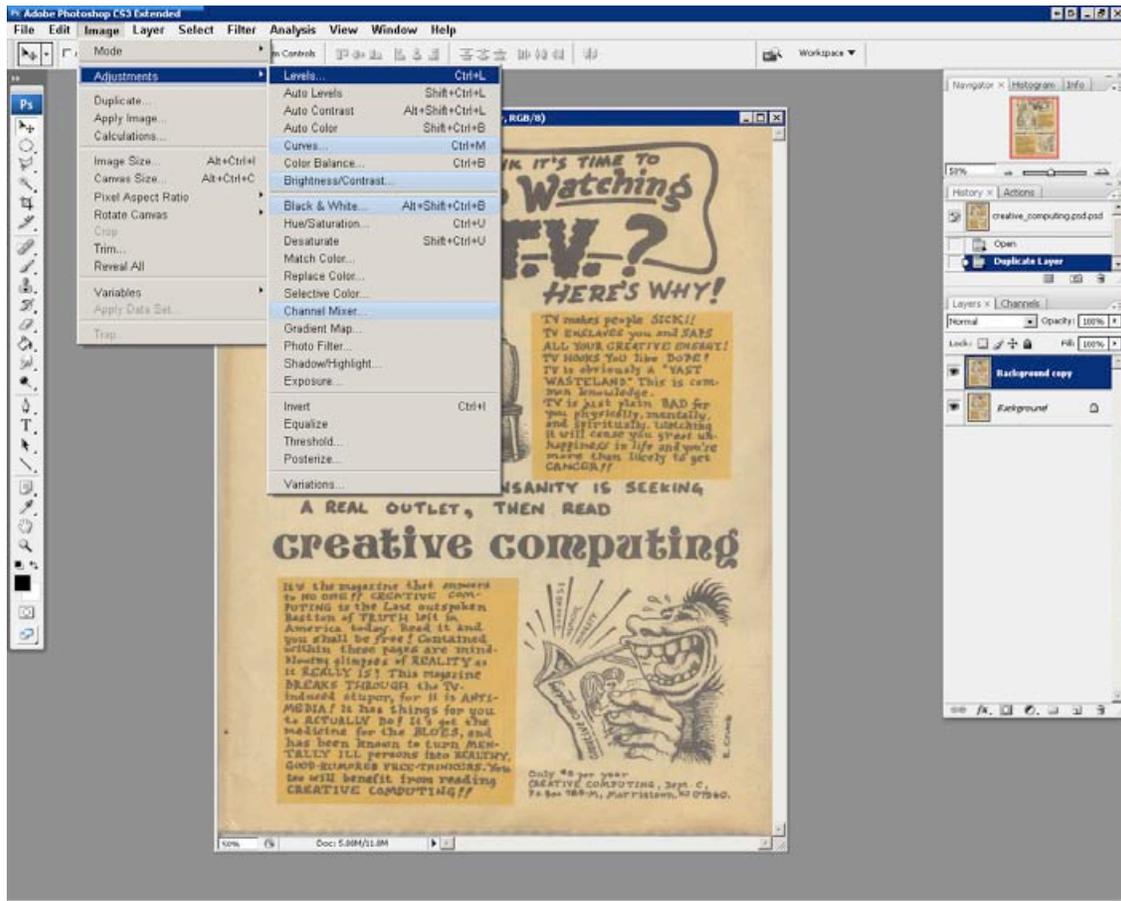
Levels Image Adjustment

This image adjustment is used to examine and/or alter the full range of light and dark values within an image or graphic.

The range of light and detail in this image can be represented by numbers on a graph (called a histogram) between 0 and 255. The histogram in the Levels window is located under Input Levels.

Let's see what Levels can do for us.

With the Background Copy layer selected, go to *Image> Adjustments> Levels*:

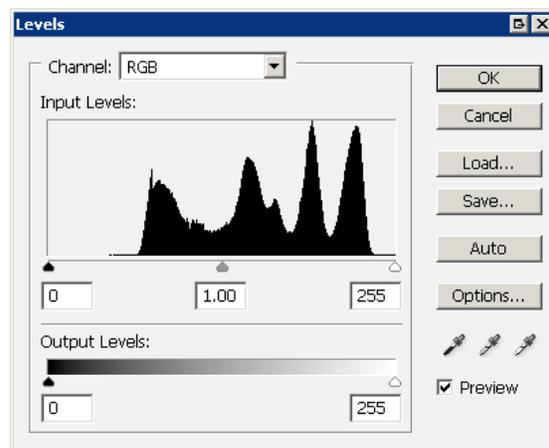


The Levels window opens.

Levels can be used to adjust the white, black, and grey points of an image. This is especially useful when correcting color.

By default, Levels affects all three colors that make up what we see in this file; Red, Green, and Blue (RGB).

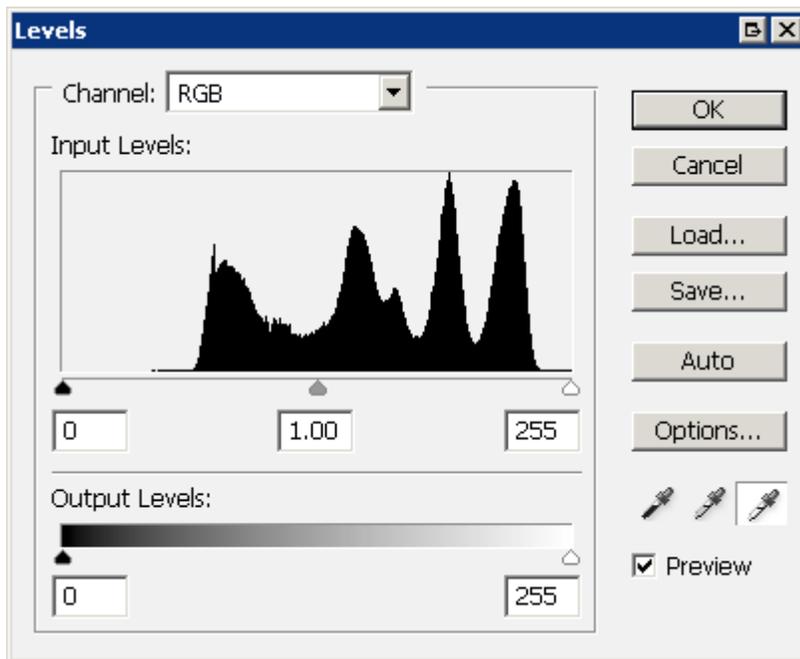
The peaks-and-valleys graphic under Input Levels is a histogram- a representation of the color information within this image between absolute black (represented by 0) and absolute white (represented by 255).



Absolute Black and Absolute White contain no detail- only color (or lack thereof).

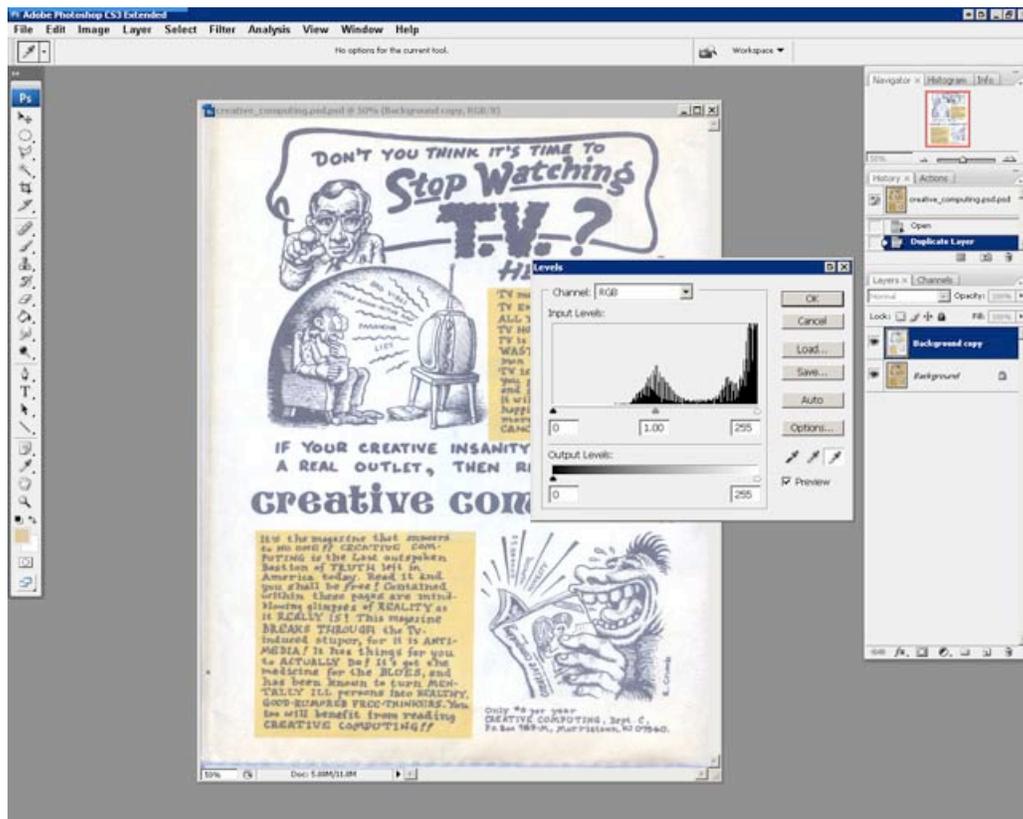
We will use these two absolutes to help bring back the original color of this file.

Click on the rightmost eyedropper in the bottom right of the Levels window. This is for setting the White Point:



The White Point is that part of the image that *should* be white.

Move your cursor over the image. Click on the empty space that should be white. You might have to click a few times to find a spot that turns the ugly damaged paper an acceptable shade of white:



Don't worry about getting the outside edges of the image gleaming white- we'll crop that out later.

Take note! The histogram under Input Levels changed when we used the White Point Eyedropper- the graph is pushed against the right edge.

All the information in the image, including colors and tones, that disappeared when we set the White Point? Gone. Erased. That information no longer exists in this layer. For this exercise, that's a good thing.

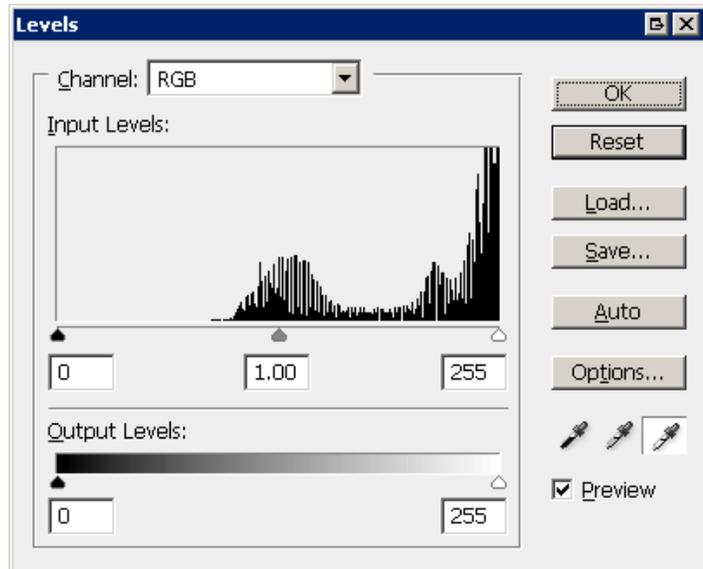
Tip: Reset changes in an adjustment window

What if you want to reset the White Point and try again? You can always click Cancel and re-open the Levels window...

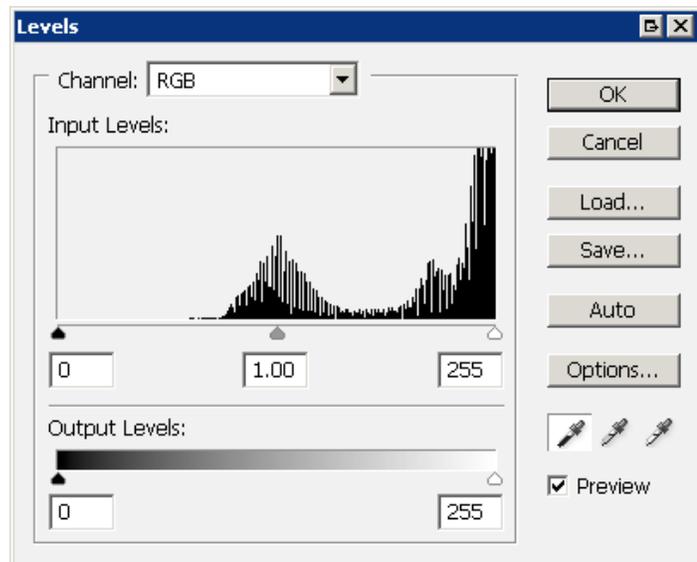
Or you could hold down the Alt key.

Hold it down now.

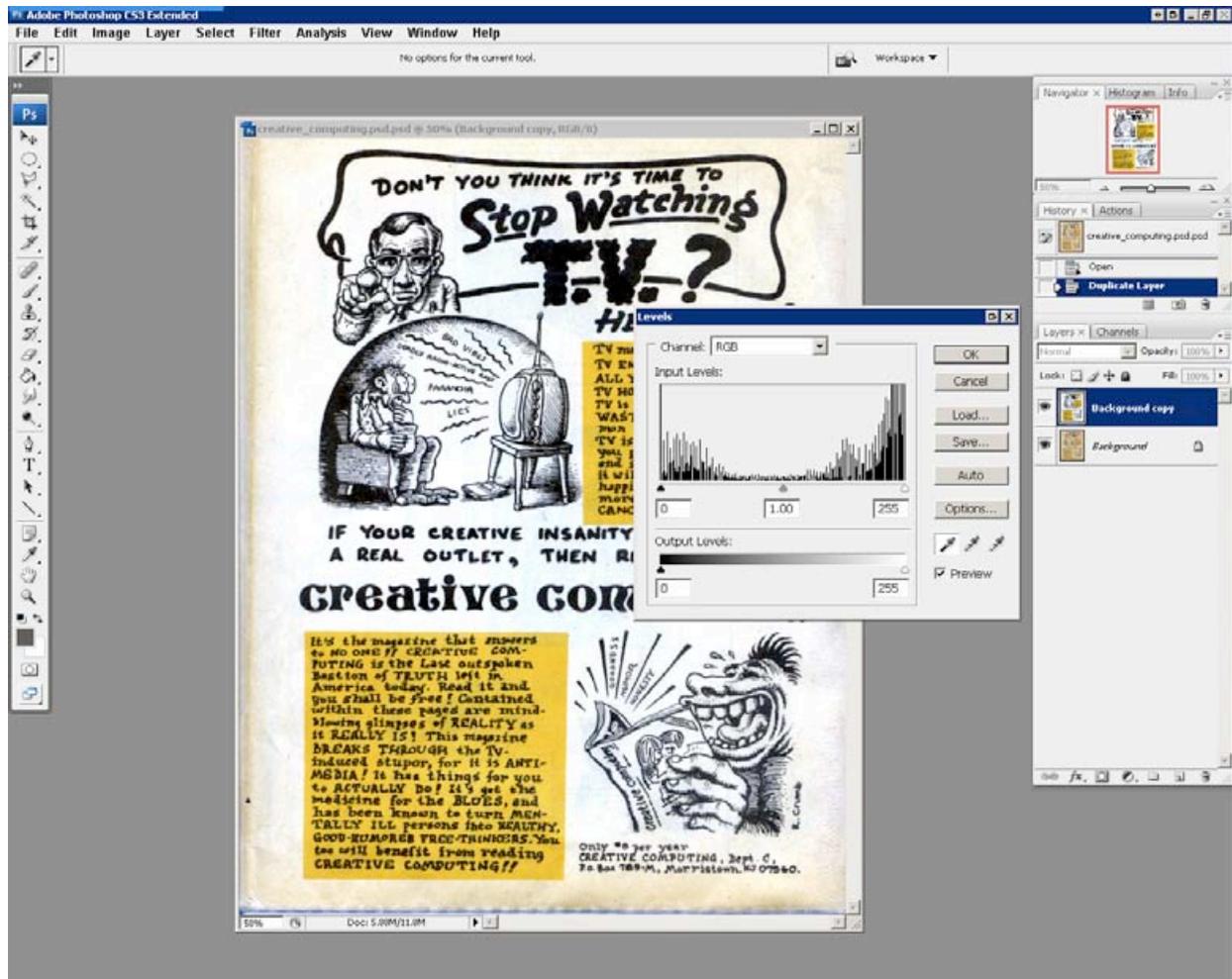
The Cancel button becomes a Reset button. This allows you to reset your changes and apply different ones without cancelling and reopening. Most adjustments that have their own window allow this keyboard shortcut to access the Reset button.



Next, select the Black Point Eyedropper (two to the left of the White Point Eyedropper in the Levels window):



Move your cursor over the image, to the middle of the T in T.V. and click to set the Black Point. You might have to click a few times to find a spot that turns the washed out ink to a deep, dark black:



Click **OK** when you are satisfied with your results.

If you want to quickly compare the adjustments we've made to the original, click on the eye for the Background Copy layer to hide.

You should see a drastic difference between the copy and original.

Reveal the Background Copy layer by clicking to bring the eye back. Make sure this layer is selected and highlighted in blue before continuing.

If you apply changes to this image but don't see an effect, you may be working on the wrong layer. Make sure the layer you want to work on is visible and selected.

Cropping

You should have an image that looks something like this, with rough (and possibly discolored) edges:

Ps creative_computing.psd.psd @ 50% (Background copy, RGB/8)

DON'T YOU THINK IT'S TIME TO
Stop Watching
TV?!
HERE'S WHY!

TV makes people SICK!!
TV ENSLAVES you and SAPS
ALL YOUR CREATIVE ENERGY!
TV HOOKS You like DOPE!
TV is obviously a "VAST
WASTELAND." This is com-
mon knowledge.
TV is just plain BAD for
you physically, mentally,
and spiritually. Watching
it will cause you great un-
happiness in life and you're
more than likely to get
CANCER!!

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medicine for the BLOES, and
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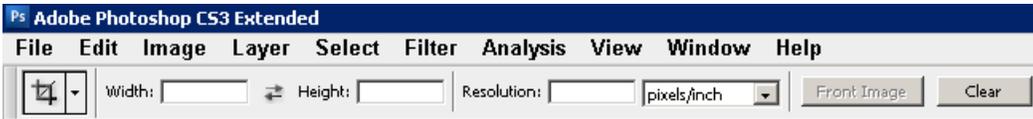
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50% **Doc: 5.88M/11.8M**



Select the Crop Tool from the Tools Palette- below the Magic Wand and above the Slice Tool.

In the Contextual Menu Bar, your settings should be the same as the screenshot here:



If your settings differ, click the Clear button to reset the Crop Tool to this default.

With the Crop Tool over the upper right of the image, click and hold the left mouse button. Drag the cursor to the bottom left corner, creating a crop box:



Release the left mouse button.

You can use the eight anchor squares around the edge of the crop box to re-size it. Try to leave an even white border around the art and text of the image, while leaving out as much discolored and/or rough edge as possible.

When you are satisfied with your crop box, hit the *Enter* key to crop:

creative_computing.psd.psd @ 50% (Background copy, RGB/8)

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Magnifying

You may need to magnify your image to see the effects of some adjustments.

Zooming in and out of an image is easy.



The Zoom Tool is located below the Hand Tool and above the Default Background and Foreground Colors Tool in the Tools Palette.

Once selected, check the Contextual Menu Bar. It should look like this:



You can choose whether it zooms in or out by default. Set it to zoom in by making sure the magnifying glass with the + is selected. We'll cover the other options in later exercises.

The Zoom Tool has four main uses:

- 1) Left click on the image to zoom in, one step each time you click.
- 2) Hold the alt key down and click to zoom out, one step each time you click. While holding the alt key, the + on the Zoom Tool should become a –
- 3) Right click on the image with the Zoom Tool to access more zoom choices. The most important ones for us are the Actual Pixels and Fit on Screen options.
- 4) Left click, hold, then drag and release to magnify a small area.

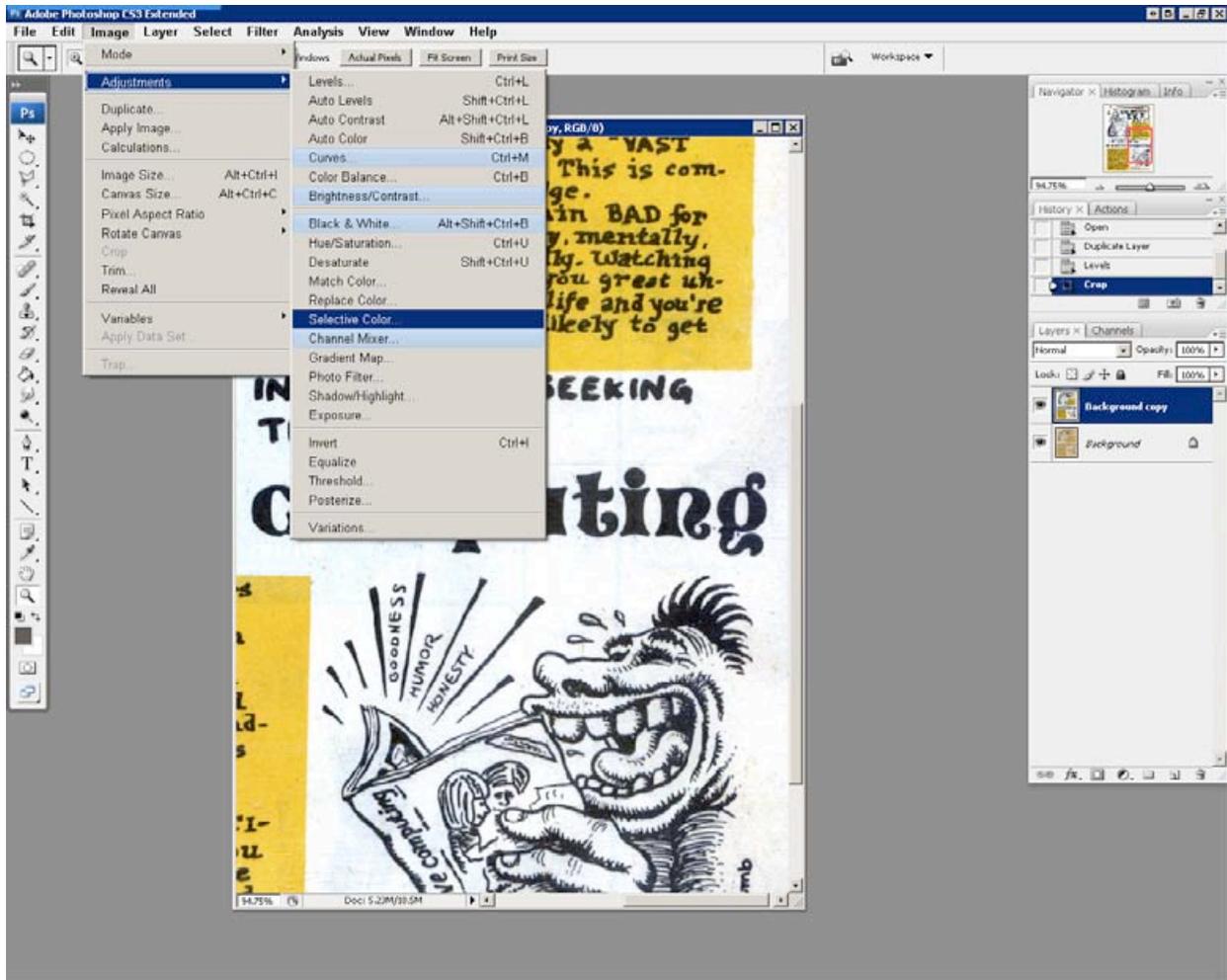
Play around with the Zoom Tool. Zoom in and out. Look at the differences in how sharp the image looks at different magnifications. It's hard to see exactly how much of an effect sharpening has on an image without looking at it using the Actual Pixels option.

Before starting the next section, zoom in on your image to between 75 and 100 percent.

Selective Color

Even after setting the White Point and Black Point, there is discoloration and fading we need to address.

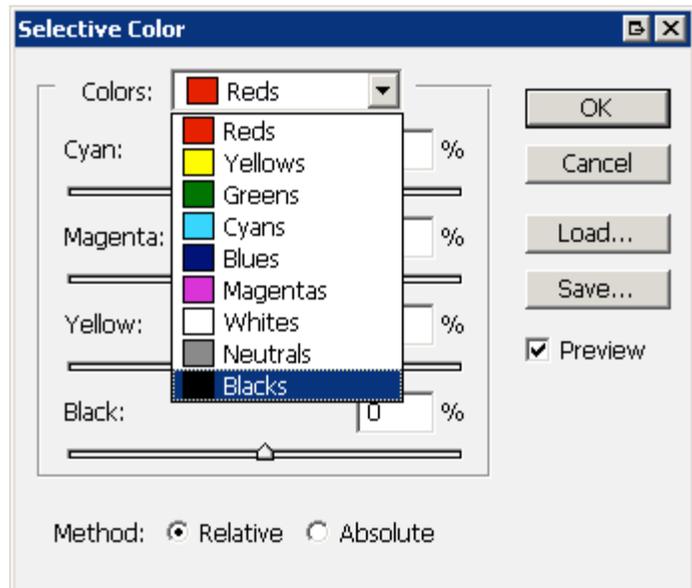
Go to *Menu Bar > Image > Adjustments > Selective Color*.



The Selective Color window allows us to break color adjustments down in to 9 groups.

We will use this to isolate our trouble areas, and rid our image of discoloration.

Click on the pull-down menu next to Colors and click to select Blacks:



Tip: Moving your image with the hand

If you have an image zoomed in while using an adjustment like Selective Color, and need/want to look at another part of the picture, you can move your image around without cancelling out of the adjustment window.

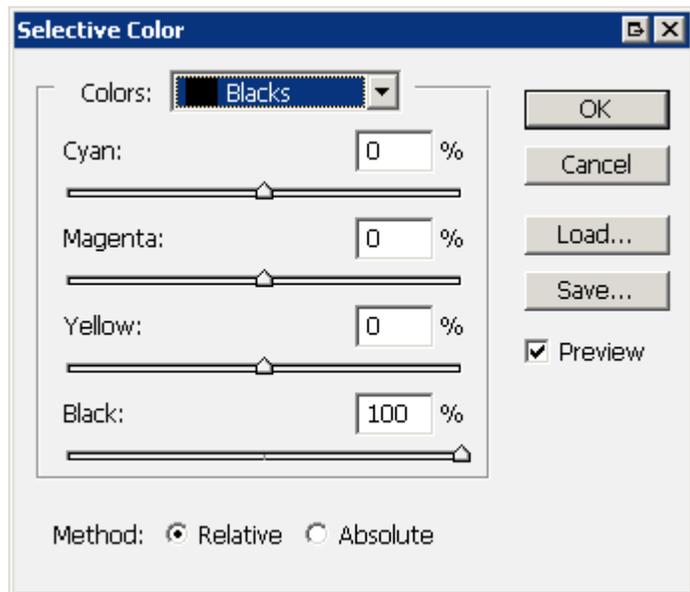
Hold the **spacebar** down and move your cursor over the image. Your cursor should turn in to the Hand Tool. Left click on the image and hold. You can now move the image around by dragging the mouse. Release the mouse and spacebar when the image is oriented to your liking.

Look over your image and examine the blacks of the large text.

The text should be faded:



Move the slider for Black all the way to the right. Or, type 100 in the text box to change:

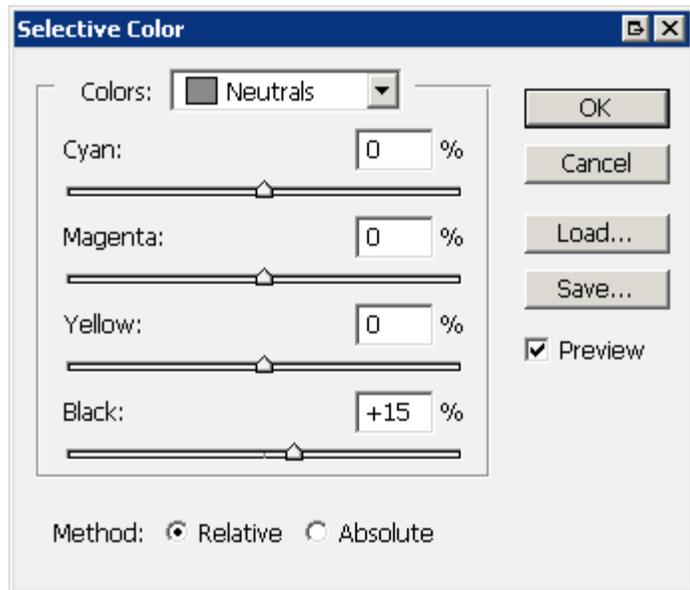


All the black in the image should be improved with this adjustment:



Click on the pull-down menu next to Colors and click to select Neutrals:

Move the slider under Black until you are satisfied with how it looks.

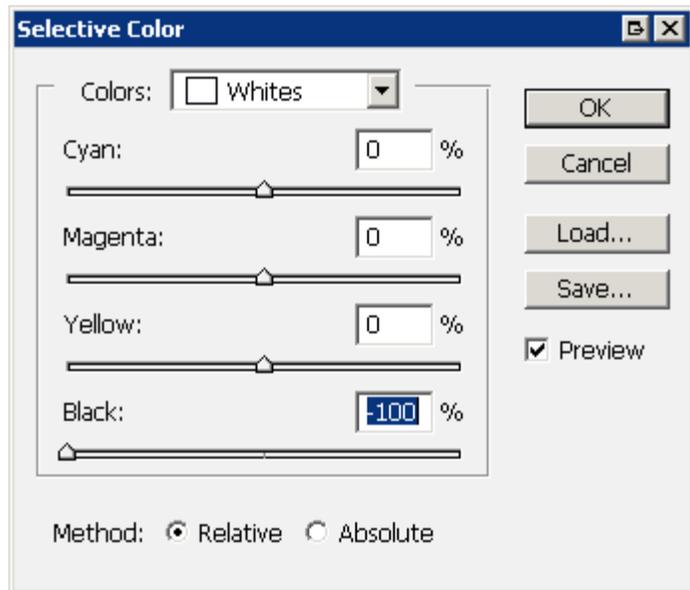


Blacks become even deeper:



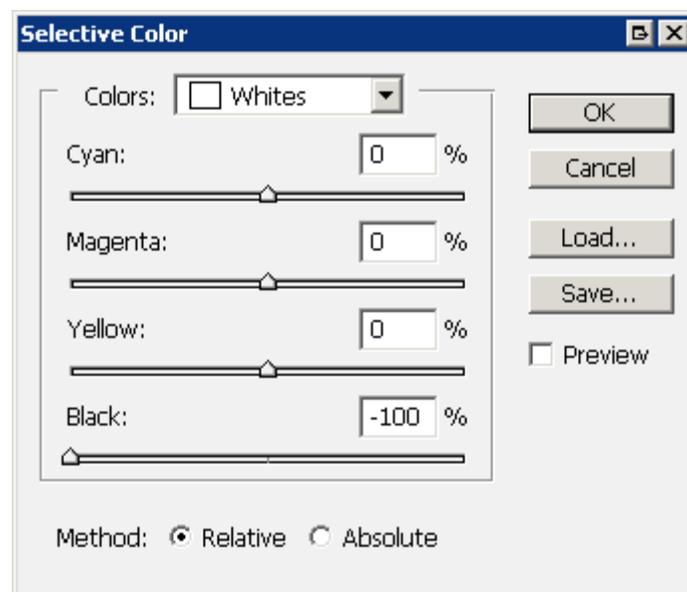
Finally, click on the pull-down menu next to Colors and click to select Whites:

Move the slider under Black to as little as -100%.



The white empty space in our image should lose most (if not all) of the remaining discoloration.

Uncheck Preview to view the results:



Click *OK* to apply the Selective Color Adjustment.

Using the Zoom Tool, right click on the image and select Fit on Screen:



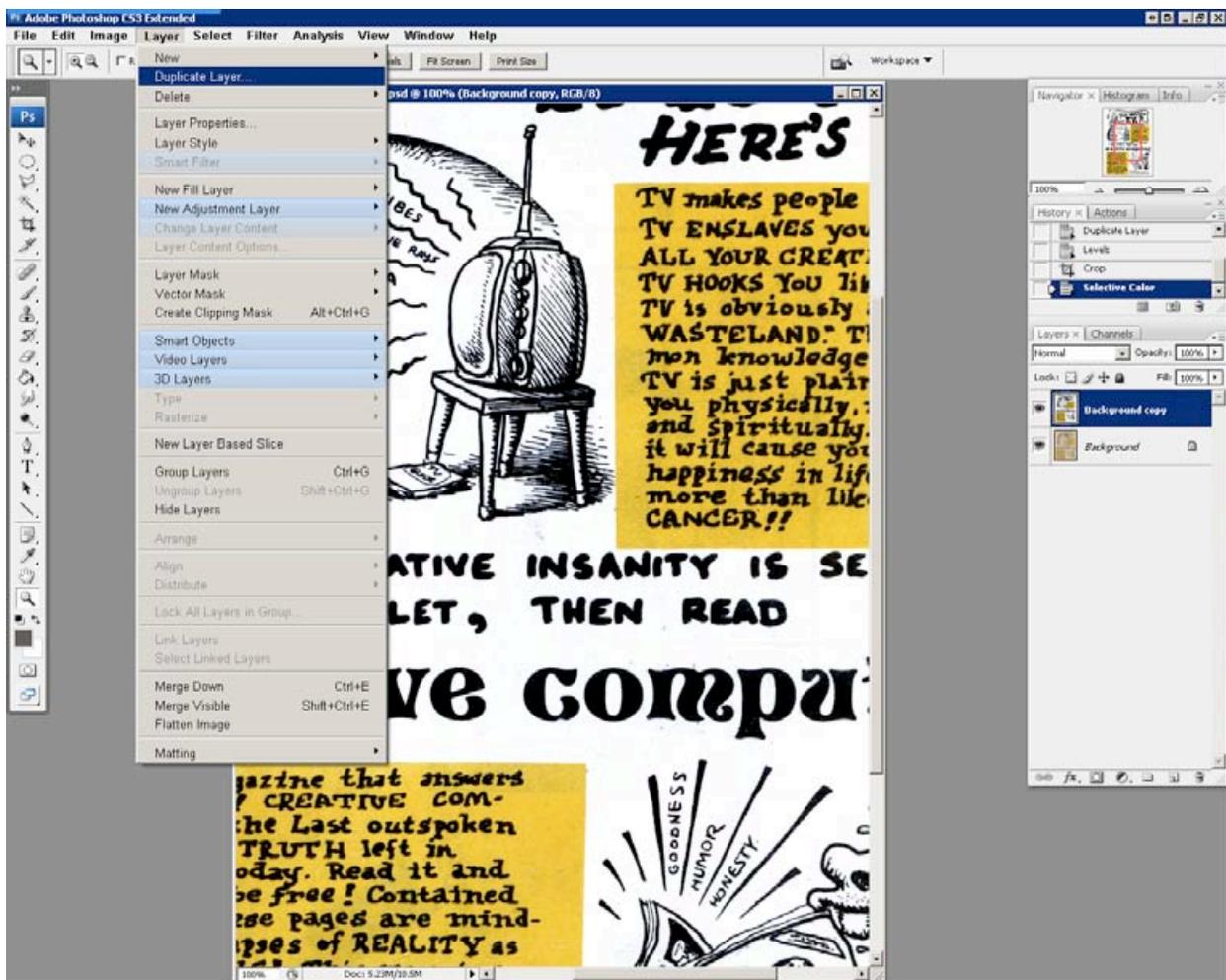
Your image should look something like this. Experiment more with the tools we've used to completely remove the dingy color from the bottom of the page. You can do it! Play around and clean this bit up on your own.

Sharpening

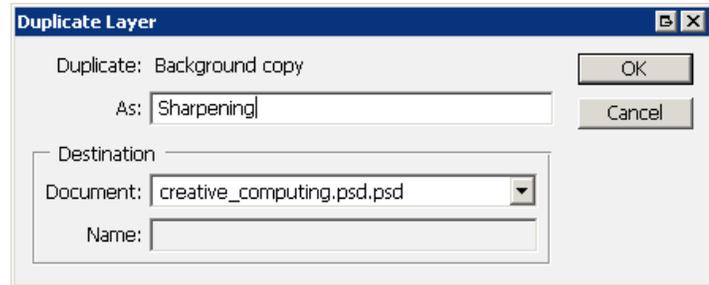
There are many sharpening techniques available in Photoshop. For this exercise we will use a technique suited to sharpening the high-contrast text and ink drawings of our image.

First we need to create a duplicate layer as we did earlier in the lesson.

Make sure the Background Copy layer is selected, and then go to the *Menu Bar*> *Layer*> *Duplicate Layer*.



Name this layer Sharpening, and click OK.



Tip: Rename Layers as Needed

Naming layers to reflect the adjustments applied to them is an extremely useful way to keep track of what you've done to an image.

To get in the habit of good layer management, let's rename the Background Copy layer.

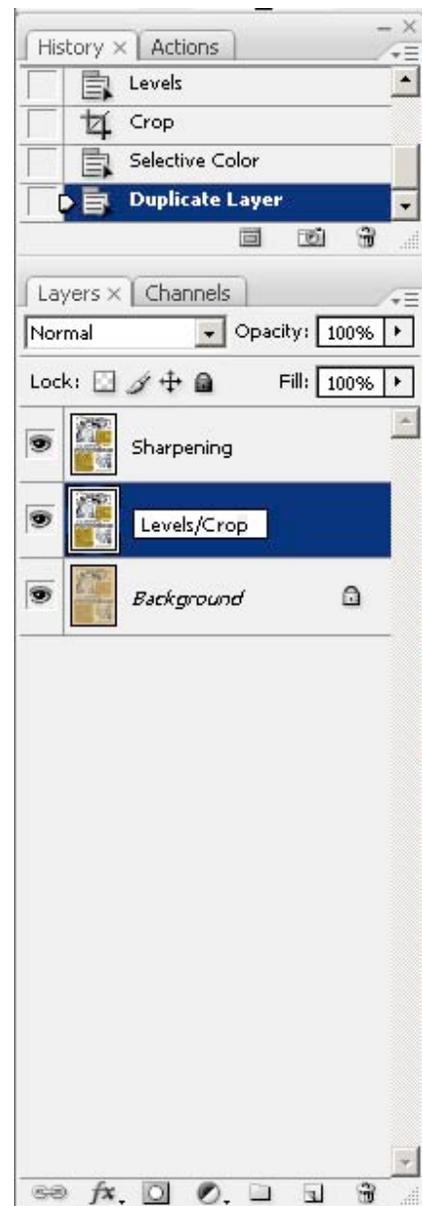
Double-click on the name Background Copy in the Background Copy layer.

The text should highlight, and you will be able to change the name. Change the name to Levels/Crop.

Hit Enter to finish renaming the layer.

Tip: Sharpening

You may want to increase magnification on your image to 100%. Often it is difficult to see the result of sharpening unless the image is actual size.

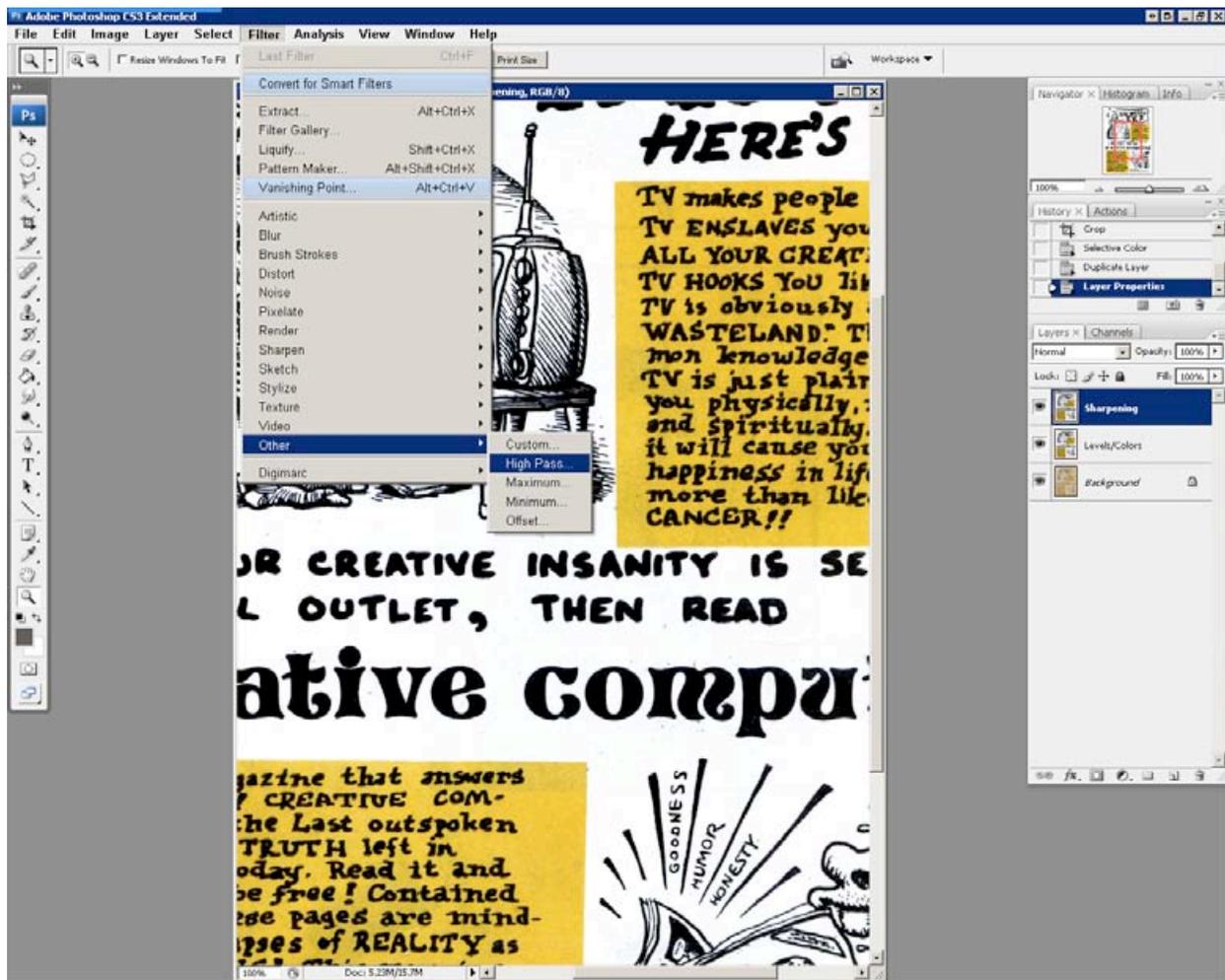


High-Pass Filter Sharpening

Make sure the Sharpening layer is selected.

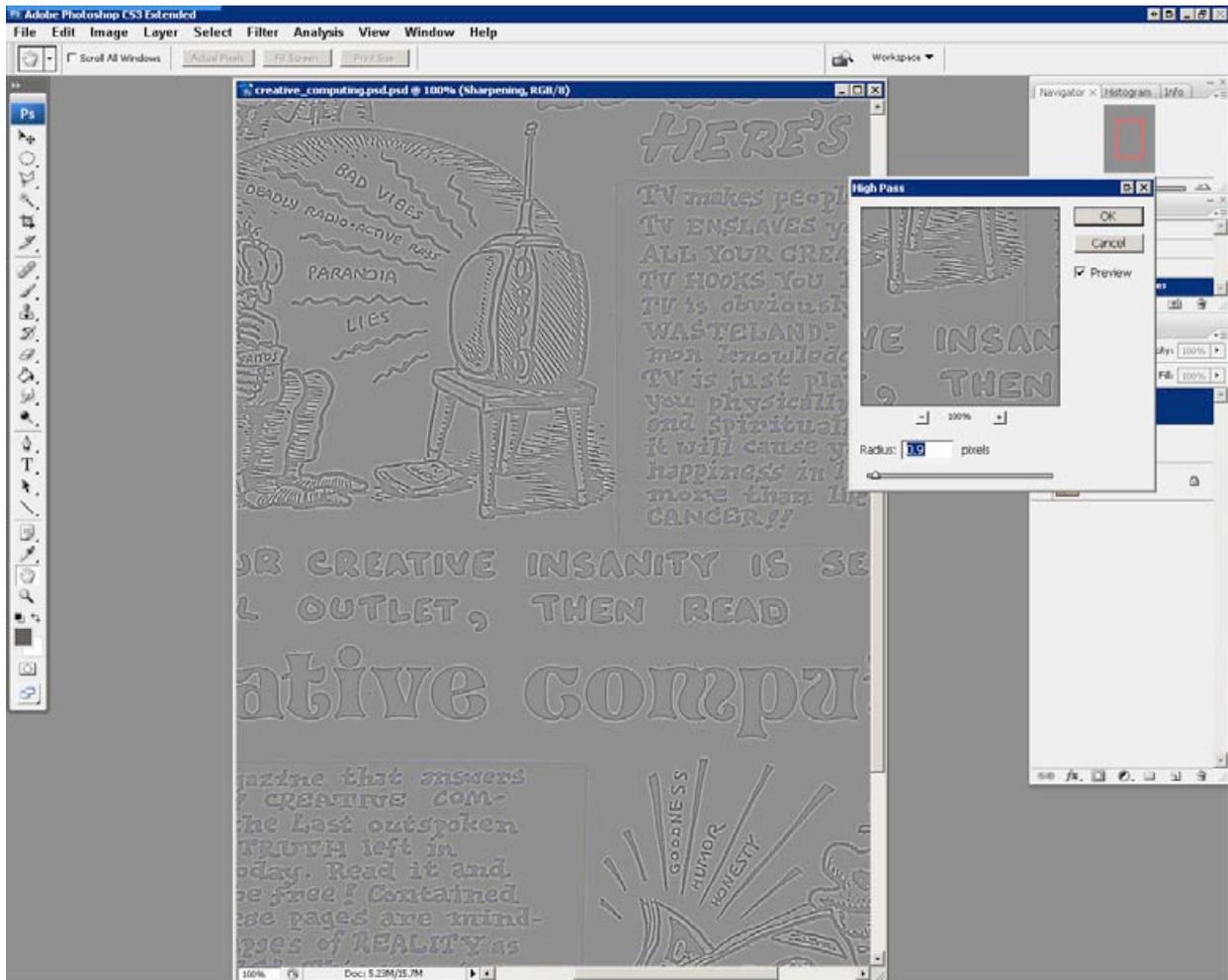
In order to make sure you can see the changes the High Pass filter makes to our image, the next four pages will contain one screen shot each.

Go to *Menu Bar* > *Filter* > *Other* > *High Pass*:



When the High Pass Filter window opens, our image turns grey. Depending on the Radius value at the bottom of the window, you may or may not see the highlighted outline of all the high contrast areas in the picture.

Make sure Preview is checked, and move the slider under Radius to see how the image changes.



Choose something around a 1 pixel Radius and click OK.

Blending to Sharpen

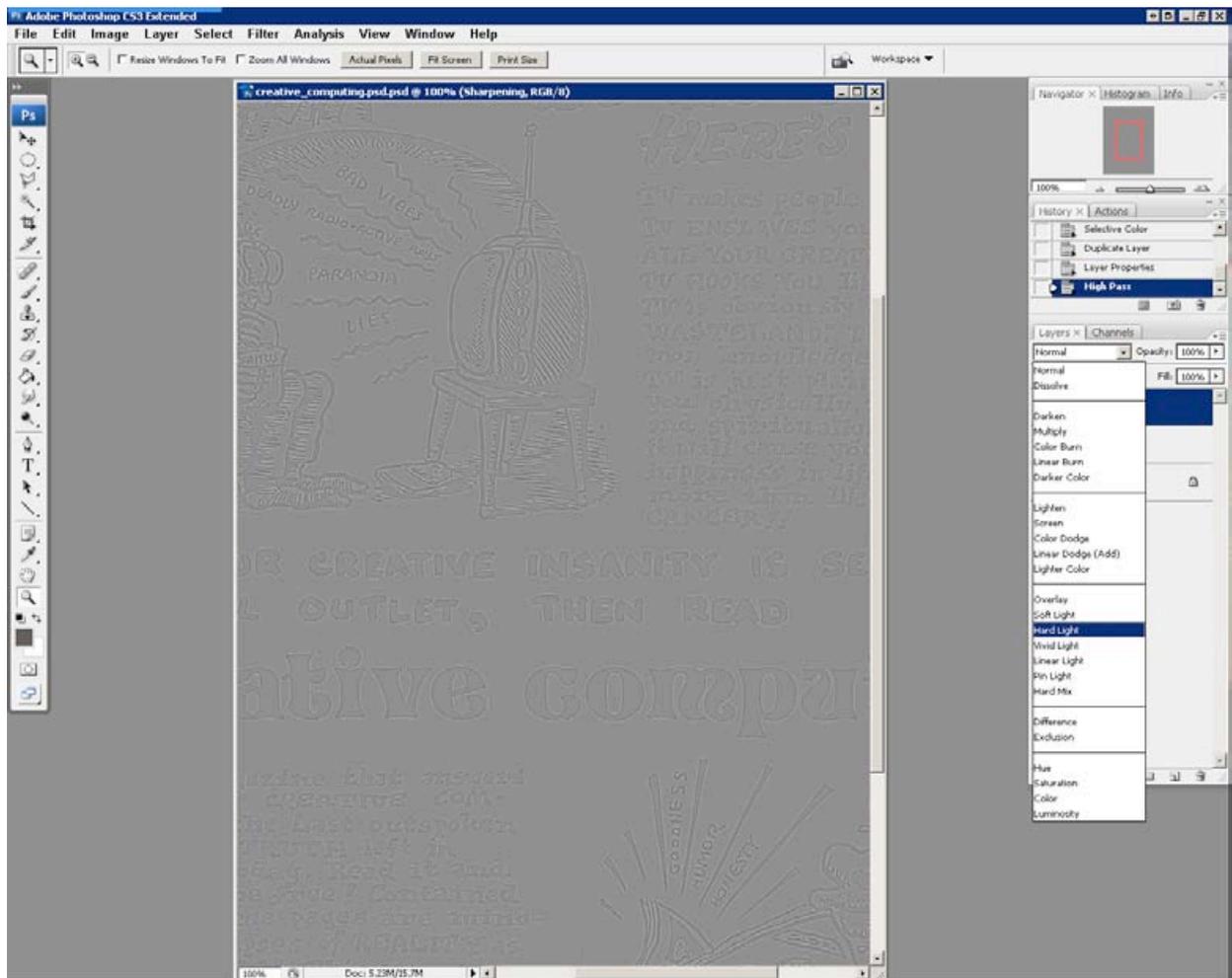
Now that the High Pass Filter has accentuated the edges of our high contrast areas, we need to apply this to our Levels/Color layer.

To do this, we change the Blending mode.

Simply put, Blending modes change how one layer overlays another.

By default, each layer is set to Normal. In the upper left of the Layers Palette, you will see a pull-down menu with the word Normal showing. By changing the blending mode, you can let one layer 'blend' in to the next- as opposed to simply laying on top.

Click on this pull-down menu and click *Hard Light* to change the blending mode:



Applying the Hard Light Blending Mode to the Sharpen layer causes the grey to disappear. This leaves the accentuated edges visible, subtly sharpening the text and graphics without distorting the image.



Conclusion

You should now have an image that is closer to the original, as produced in the 70's, than the dingy and dull version we started with.

These simple techniques can be applied to any kind of image or graphic, and are built on in the Intermediate class to increase your confidence when using this powerful tool.

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