When I sat down to think about the problem of creating Escher-like stairs using the bell tower stairs, I realized that this was basically a construction problem. Sure the construction is virtual and digital, but it's still a construct. So putting my virtual hard hat on, I needed to create a basic building block. I knew that with the right building block, I could construct anything. The building block had to be flexible in that I could flip, twist, rotate, and skew it, merge it with itself, and use it at a variety of different sizes.

With this building block, I could construct any number of fantastic stairs, witness the images on pages 160–161 and 179. So the first item on my construction job was to create the building block which I think of as my primitive—it is a relatively simple image that I can use over and over to build images that are much more complex.

Removing the bottom of the stairs
Looking at the bell tower stairs, it was clear to me that my primitive element had to be the stairway above the first landing. This portion of the stair is very generic and has some scrumptious twists and turns in it as opposed to the relatively short set of steps up to the first landing that would be hard to join with anything else.

So I pulled out the Clone Tool and Brush Tool and got to work. Besides cloning out the bottom part of the stairs, I adjusted the color for greater neutrality.
I like to start with a construction plan, but I find that something like the Twisted Stairs are too complex to fully plan out with the equivalent of a virtual blueprint. Things never go exactly according to plan.

Once I have my primitive I can experiment and see what I can come up. Experimenting doesn’t mean that the image will work. My first attempt used more than 500 layers and several days, but it didn’t work visually, so I had to trash it.

Fortunately, I had developed the primitive, and my experience from the first false start let me put together the subsequent images much more quickly and efficiently.

Now the real adventure begins! Turn the page…

This cloning is a bit sloppy, but I’m not worrying too much about it until I begin to put some of the pieces together because the messy bits probably won’t be in the combined image anyhow.
CASE STUDY: TWISTING REALITY

The Compositor’s Cafeteria

Take a bite out of reality
The menu in the Compositor’s Cafeteria is varied and tasty. You’ve got your appetizers, you’ve got your dessert, and most important of all you’ve got your main course. As your mama always said (maybe), you need to eat a balanced meal with your protein and veggies.

The main course is on the Edit ➤ Transform menu. You like your composite simple? Then, Scale, Rotate, Flip Horizontal, or Flip Vertical. You want to get things a little more gourmet? Then, Skew and Distort. Rich butter sauce more your thing? Go for Perspective and Warp. This tasty buffet of options is arranged for your delectation right over here.

How to use the Transform commands
1. In the Layers palette, select the layer you want to transform.
2. Choose Edit ➤ Transform and pick a command from the fly-out menu. Handles (which look like little squares) will appear around the edges of the layer in the image window.
3. Position the mouse over a handle and click and drag to adjust the layer. If you are scaling an image and want to resize it proportionately, hold down the Shift key while you drag.

Changing commands as you work
If you are working with a transformation command such as Rotate and you want to change to another command like Skew, right-click/Control+click to access a pop-up menu and select the new command.
Original primitive

Stale (reduce or enlarge)

Rotate

Skew

Distort

Perspective

Warp

Flip horizontal

Flip vertical

Building the Impossible