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The Creative Digital Darkroom, by Katrin Eismann and Seán Duggan  
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Photographs ©2008 Katrin Eismann and Seán Duggan

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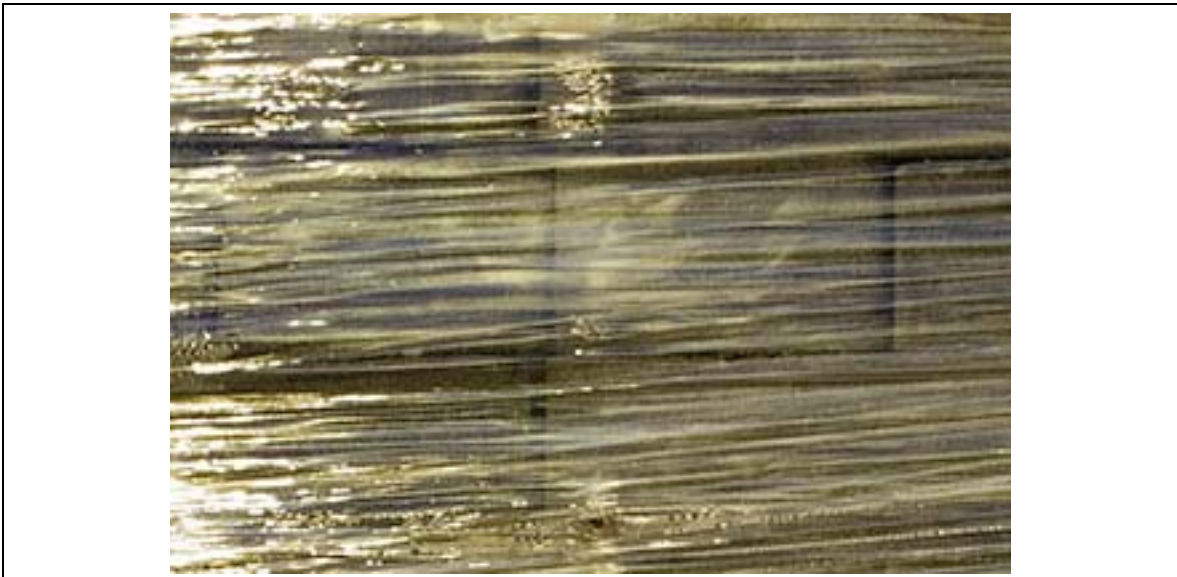
## Lens Quality

It's a pretty simple equation – better lenses create better images. But better lenses or as some manufacturers categorize them professional versus consumer lenses do have their drawbacks. Pro lenses are more expensive and in most cases weigh a great deal more and are larger and bulkier. If you don't plan on making prints larger than 8 by 10 inches the expense and weight of the high-end lenses may not be worth it. If you need to make large prints you'll need the best lenses possible. We feel that its better to get the picture with a lens that you can afford and carry around all day than to not get the shot at all. Good lenses produce files that are; sharp without being overly contrasty; are free of unwanted distortion; and don't reveal any optical weaknesses as described and shown here.

- **Image Sharpness:** You can always make an image softer in Photoshop, but starting with a file that isn't sharp edge to edge or has soft corners is an exercise in frustration. The close-up of the corner in *figure 1* is soft and to make matters worse the highlights show color fringing. Considering that every image Katrin would take with this lens would have soft corners, she returned the lens the very next day.
- **Distortion:** More common in wide-angle lenses or lower quality zoom lenses. Distortion makes an image look bowed and is most apparent on straight lines such as in architecture or as seen in *figure 2* the horizon line is terribly bowed. After processing the image with DxO Optics Pro the distortion and the vignetting have been corrected.
- **Vignetting:** A darkening of the image corners, caused by improper lens shades, poor lens design, or over zealous use of filters on the lens. Vignetting is best avoided, but mild vignetting can be corrected in Adobe Camera Raw as shown in the example in *figure 3*. More defined vignetting caused by an improper lens shade and can be removed with cloning, healing, and masked lightening with a Curves or Levels adjustment layer to conceal the darkening.
- **Chromatic Aberration:** Is caused when the light doesn't focus at exactly the same image plane and the image channels aren't perfectly aligned. It is most visible along bright, high contrast edges when using wide-angle lenses as seen on the edge of the sign and in the winter tree branches of *figure 4*. To remove the chromatic aberration in this example, Katrin used Adobe Camera Raw.
- **Flare:** Caused by poor lens construction, not using a lens shade or if the light source is too close to the edge of the frame – flare reduces overall image contrast and adds both monochrome and color shutter shaped splotches as seen in *figure 5*. Avoiding flare is the best remedy, but after the fact cloning and healing is your best recourse.



*Figure 1a. At first glance this image looks sharp overall.*



*Figure 1b. The corners of the image show significant softness and highlight fringing.*



*Figure 2a. The lens used to photograph this scene created distortion and edge vignetting. © KE*



*Figure 2b. After processing the image in DxO Optics Pro the horizon line is flat and the image is evenly exposed.*



*Figure 3a. The 20 mm lens darkened the corners, which is especially noticeable in the sky.*



*Figure 3b. Correcting the vignetting balances image.*





Figure 4-a. Chromatic aberration is apparent when viewing a file at 100 or 200% view.



Figure 4b: Correcting for chromatic aberration is best done in the raw conversion and increases the perceived sharpness of the image.



*Figure 5a. In this example the flare is distracting.*





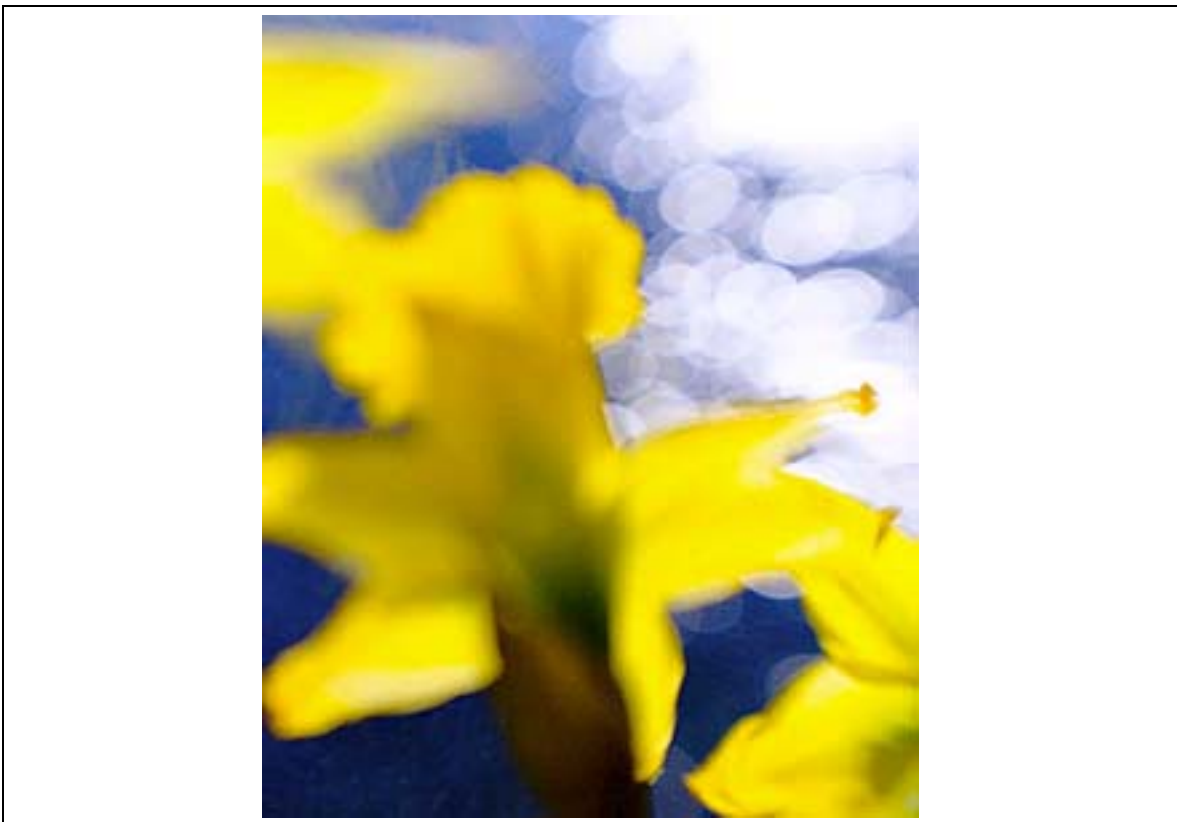
*Figure 5b. Removing the flare reduces the distractions.*

### **Creative Lenses**

Ignoring all of the standard rules and considerations for technically perfect files is refreshing and liberating. Both Séan and Katrin enjoy experimenting with toy cameras, pinholes, super wide angle lenses and Lensbabies (selective focus lenses for 35 mm cameras) all of which add a quirkiness and character to images as seen in *figures 6-9*. In the end it comes down to using the appropriate lens, camera, perspective, technique, filter, etc., to create the best image for your vision, intent, and expectations.



*Figure 6. Photographing with a superwide 10.5 mm lens allows the daffodil to dwarf the gazebo.  
© KE*



*Figure 7. Photographing against the light with a Lensbaby Katrin juxtaposed the bright yellow  
daffodils with the glistening water of the Hudson River. © KE*



*4-8 A four second exposure with a pinhole camera and extensive digital darkroom work created this over-worldly image. © Séan Duggan*



*4-9. Photographed with a Holga camera, which adds a unique quirkiness to the scene that was accentuated with multi-toning and extensive dodging and burning. © Séan Duggan*