Creative Exposures

Correct Exposure or Creatively Correct Exposure?

When photographing, how do you decide what exposure settings to use? Do you think about the scene and how you want it to be rendered in the final image or do you just spin the dials until the light meter indicates a correct exposure? Does it really matter what aperture and shutter speed combination is used if it gives a correct exposure value? While there are many correct exposure settings for any given photograph, I believe that there is only one truly creative exposure for that same image. This project will help us to really understand the exposure triangle and be able to consistently find the settings that will allow for personal interpretation of a scene. Only when we completely understand what each component of the exposure does can we find the creatively correct combination.

Every time you press the shutter release button on your camera, there are three components working together to render the final image on the film or digital imaging sensor. These three components are the aperture, shutter and ISO. The settings selected for each of these will have a direct effect on the outcome of the final image. Figure 1 shows the exposure triangle and what each of the three components of exposure affect. Aperture controls depth of field, the shutter controls blurring caused by motion (either subject motion or camera motion) and the ISO has a direct effect on the amount of noise (or grain in the case of film photography) in an image. In this project we will be looking at three different options for aperture settings and three options for shutter selections. As for ISO, keep in mind that the lower ISO settings will keep noise to a minimum, so it is generally best to keep it as low as possible and still be able to successfully capture the desires photograph.

With an aperture of f/22 and focusing on the rocks that have waves rolling over them (approximately one third into the frame), the entire scene from foreground to the background is rendered in sharp focus.

Deep Depth of Field

There may be times that you will want the entire image, from the closest foreground object to the most distant object in the scene to be sharply focused. This is very common in landscape and architectural photography. The aperture that you select as well as where in the scene you place your focus point will determine the range of focus that you are able to attain. In order to maximize your depth of field, or depth of acceptable focus, you should stop the aperture all the way down to its smallest opening and then focus approximately one third of the way into the scene. This is necessary because the increase in depth of field does not increase equally in front of and behind the point of focus. It is approximately one third in front of and two thirds behind the point of focus. Remember also that if you focus at infinity you will not get any benefit of increased depth of field behind the focus point. You cannot focus any farther out than infinity! In the image above, I focused on the rocks that are about ten feet away from the camera and was able to achieve sharp focus on both the near and far rocks in the scene.

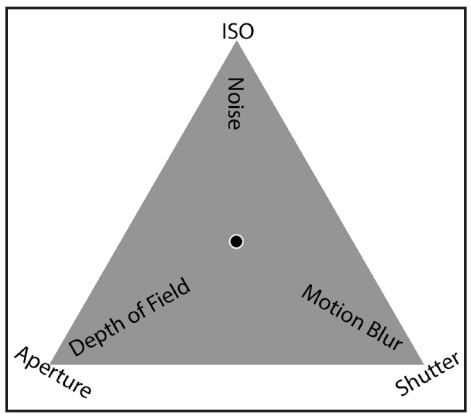
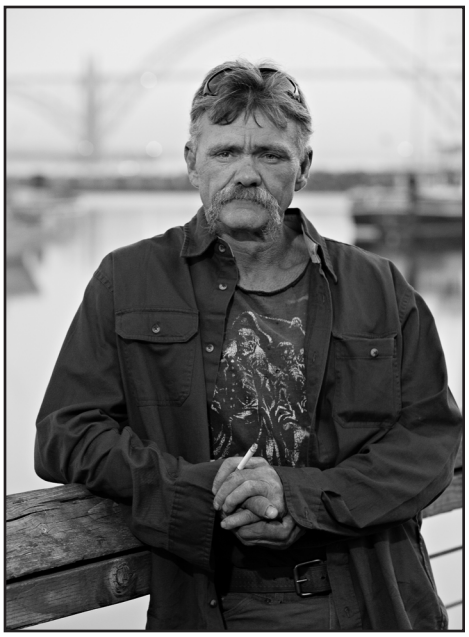


Figure 1. The Exposure Triangle

When selecting a very small aperture, the need to compensate with a slower shutter speed or an increase in ISO will be necessary in order to achieve a correct exposure. Most often a tripod will be necessary for successful images with a deep depth of field unless you are able to increase the ISO sufficiently without introducing an unacceptable amount of digital noise.

Isolation of Subject

Isolating a subject, or enhancing its ability to stand out from the background can be achieved with a very shallow depth of field. This is also referred to as selective focus. The settings you choose will be just the opposite of those chosen for creating a deep depth of field. Select a very large aperture, wide open for minimum depth of field. Compensation for this wide open aperture will result in a faster shutter speed and/or low ISO. This technique is very useful in, but not limited to portraiture, as it allows for the background to be rendered out of focus while the subject remains sharp. It is a great way to eliminate distracting elements in the background. It is also useful anytime you want to direct the viewer to a single subject within the frame. Just make sure to focus carefully, as there is no room for error. If you miss focus, the photograph will be useless. The compressing characteristics of a longer, or telephoto lens will also help in creating separation of subject and background.



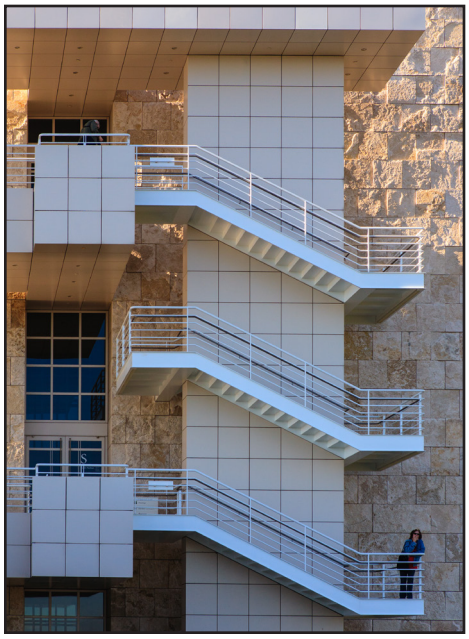
When selecting apertures for minimum or maximum depth of field, keep in mind that these are *not* the sharpest apertures for making photographs. Most lenses are sharpest when the aperture is set at two or three stops down from wide open. When photographing for maximum depth of field, I like to use the widest aperture that will still give me the depth of field that I need. Learning what aperture setting is needed comes only through experience. You must make a lot of photographs, and make a lot of mistakes along the way, to really master the creative aspects of the camera.

Who Cares? Apertures

When everything in the image is on the same plane (equal distance from the camera), it really doesn't matter what aperture you choose as it will all be in focus with any setting, as long as you focus the camera correctly. In these situations, you should select the sharpest aperture for your lens, which as mentioned earlier is usually two to three stops down from wide open. For example, if you have an f/4 lens then your sharpest aperture will be somewhere between f/8 and f/11. By selecting the sharpest aperture you will get the most crisp image that your camera and lens is capable of creating. This will result in better contrast and less Photoshop work to do later in an attempt to correct for the inherent deficiencies of selecting a less than ideal aperture.

Left: Creating separation from the background was accomplished by using a 125mm lens at f/5.6. This image was taken long after the sun had set, so a tripod was necessary for the .6 second shutter speed, even at an ISO of 1600.
Right: Selecting a shutter speed of 1/1000 second stops the ball carrier in his tracks.

When the subject is perpendicular to the camera and has very little depth, then choose the sharpest aperture that your lens offers. The side of this building was photographed at f/7.1 with a 24-70mm f/2.8 lens.



Freezing Motion

The shutter is what is used to control motion in an image. If the

subject is moving and we want to stop that movement so that everything is sharp and we can see every bit of detail in the resulting photograph, then we must choose a shutter speed sufficiently fast enough to effectively freeze the motion of the subject. Knowing how fast is fast enough will only come with practice. Just keep in mind that the speed of your shutter will be relative to the speed of the subject. In other words, the faster the subject is moving, the faster your shutter speed must be.

Other factors that will affect how fast a shutter speed you will need are the distance between you and the subject, lens selection and the direction of the motion. If the subject is moving parallel to you as opposed to toward or away from you, then a faster shutter speed is needed. The closer you are to the action, the faster your shutter speed will need to be as well, and finally, the longer the lens you are using, the faster the shutter speed will need to be in order to freeze the action.

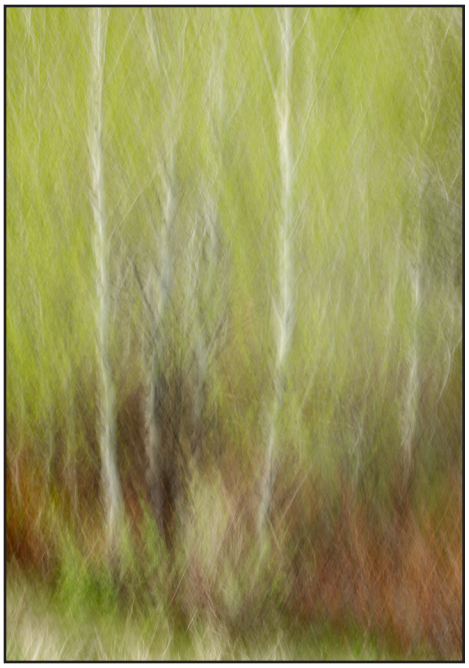
Panning

Instead of freezing the motion, what if you want to show the motion in a way to illustrate speed? Panning is just the technique to use. While it is a difficult technique to master, panning can open up a new world of creativity for your photography. When panning, instead of keeping the camera stationary, it is moved, tracking the moving subject while using a slow shutter speed. When successfully practiced, the resulting photograph will show a sharp, or fairly sharp subject with a background that is a blur due to the motion of the camera. If there is texture in the background, then the blurring will show long streaks in the direction of the motion, kind of like applying a motion blur filter in Photoshop, but only better!

Panning: With a shutter speed of 1/10 second and panning with the racing cyclist, the face was rendered fairly sharp while blurring everything else that was in motion.

The shutter speed needed for successful panning photographs is, as with the other techniques previously discussed, relative to the speed of the moving subject. A good starting point, however, is 1/15 or 1/8 of a second. Try a few shots and then evaluate them. If the entire image is a blur, including the subject, then your selected shutter speed is too slow. Speed it up a little at a time (remember to compensate with an adjustment to the aperture) until you see the desired result. If everything is tack sharp and no motion is evident, then it is too fast. Adjust your shutter speed down a little bit at a time and try again. Eventually you will find the perfect settings.

To show the motion of the water I needed a 6/10 second shutter speed. To keep everything in focus I needed at least f/20. The only way to get both shutter speed and aperture where I needed them was to increase the ISO to 200.



Hand holding the camera with a one second shutter speed transformed the aspen trees into a painterly looking image, taking on a very abstract look and feel. This type of photography is very unpredictable, but at times very rewarding. When learning this technique, it may be necessary to make many images just to get one that is successful.

Implying Motion

There are two ways to imply motion in a photograph. One is to keep the camera stationary and photograph a moving subject with a slow shutter speed. This is a great technique to use with moving water, such as a stream or a waterfall. When photographed with the perfect shutter speed, the resulting image will show silky bands of water indicating motion. If the shutter speed is too slow, however, you will end up with just a white blob without any texture at all where the soft ribbons of water should be. If a shutter speed faster than ideal is used, then you will stop all motion and end up with an image showing every droplet of splashing water. It will look frozen instead of fluid.

The second method to imply motion is to photograph stationary subjects, and using a slow shutter speed, move the camera. The results are often very unpredictable, but sometimes very interesting. You can get an almost painterly or even abstract view of the world around you.

When it comes to photographing motion, these are the techniques that I opt to use quite extensively. Learning to capture motion in these ways has really opened up a whole new world to me. Visually, it is the way I see, so naturally, this is the way I photograph.

With any of these methods of capturing motion, the shutter speed selected is critical. Just a fraction of a second too fast or too slow and the image will take on a completely different look and feel than what you were looking for.

Summary

Creativity in photography is all about exposure settings. Equivalent exposure, or the law of reciprocity, states that any number of exposure settings will cause the right amount of light to strike the imaging plane to give a correct exposure. What it doesn't say is that there may only be one of those settings that will produce the image that exhibits your personal vision. Aperture controls depth of field, shutter speed controls how motion is captured and ISO controls the amount of digital noise exhibited in the image. Master these controls and you will become a master of your camera. As you develop your personal vision you will then have the skills necessary to consistently produce that vision in your photographs.

Assignment

Your assignment is to produce a set of images with each of the six methods discussed. You must have a minimum of ten photographs for each, however more is better! The more you photograph, the better you will become. You will produce one finished image of each. Along with your photographs, you will turn in a reflection paper, discussing your work and what you have learned or discovered from while working on this project. Did you discover a new way of working? What type of images do you gravitate toward when out photographing? Are any of these methods more difficult for you than the others? Why do you think this might be? These are a few guiding questions to help you write your reflection paper.

You should begin each assignment by researching and finding examples. Brainstorm ideas so that you are not going at it blindly. With this assignment, there is a lot of variety, so you should be able to begin photographing almost immediately. After each photography session, sort your images into folders for each exposure type, review your successes and analyze your mistakes, then go out photographing again, keeping in mind what it is that you need to work on.