Photzy

10 CAMERA CONTROLS EVERY PHOTOGRAPHER SHOULD KNOW

Quick Guide

Written by David Veldman

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So you've gotten your first camera. The package has finally arrived, you've charged the batteries, and inserted a brand new SD card. Breathlessly, you switch your camera on and snap a shot.

Wait. This doesn't look so good. In fact, it doesn't look anything like you wanted it to.

You know this camera can take amazing pictures. You saw the advertisements. So what's going on? Don't throw your camera through the window just yet.

Today, I'd like to introduce you to the 10 camera settings that you need to know.

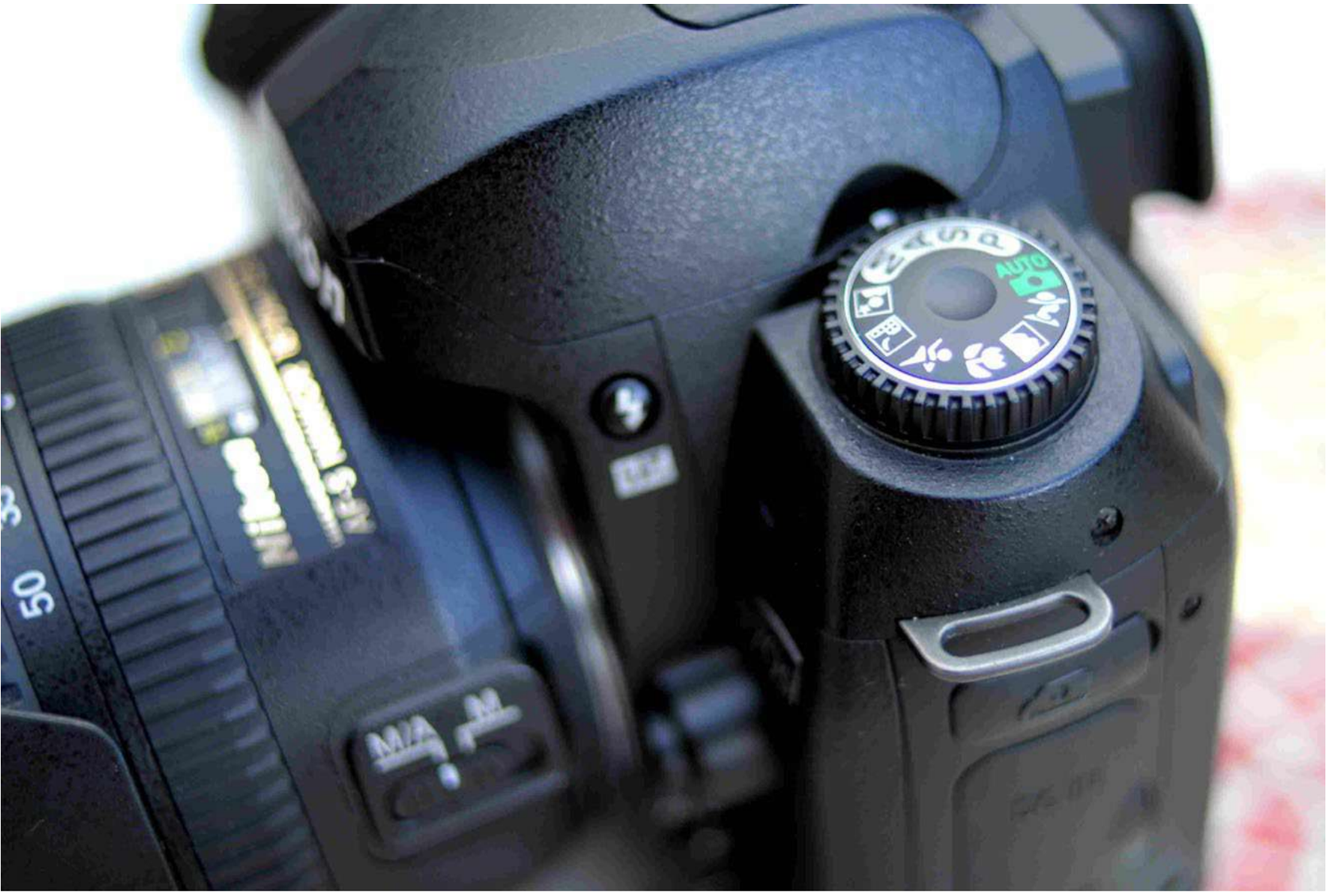

Photo by Salim Fadhley

While cameras can vary widely by manufacturer, or even model, these 10 settings can still be found on just about every digital camera.

Most digital cameras are operated with a PASM switch. This is the dial on the top of the camera that allows you to choose between Program Mode (close to Automatic), Aperture Priority Mode, Shutter Priority Mode, and Manual Mode.

All DSLR cameras function this way, as do most compact cameras and mirrorless cameras.

A few companies have avoided this dial in favor of the inclusion of an aperture ring on the lens and a dedicated shutter speed dial. This makes this type of camera feel more like an old-school film-style SLR. Your particular setup will depend on the camera you purchased.

Utilize your camera until you're completely comfortable with the controls so that you won't fumble when you see a shot you really want to take.

A quote that I'm quite fond of is "gear doesn't make a picture, the photographer does."

I often encourage people not to focus too heavily on equipment, and instead concentrate on honing their composition, post-processing skills, and artistic vision.

> **Note:** If you'd like to improve your composition and post-processing skills, grab a copy of Photzy's Best Selling books – Understanding Composition and Understanding Post-Processing.

That doesn't mean that you shouldn't know your equipment inside out. While a concert violinist can pick up any violin and produce beautiful music, they will know every aspect of their particular instrument.

You need to utilize your camera to its fullest potential, and you should be completely comfortable with the controls.

That way, when you see a shot you desperately want to capture, you won't find yourself fumbling around.

The best place to start is with your camera's manual.

If you're not interested in reading the entire manual, this guide will let you know the critical points to research.

The first three that I will cover are the most important. They are the 'big three' that control your exposure: aperture, shutter speed, and ISO.

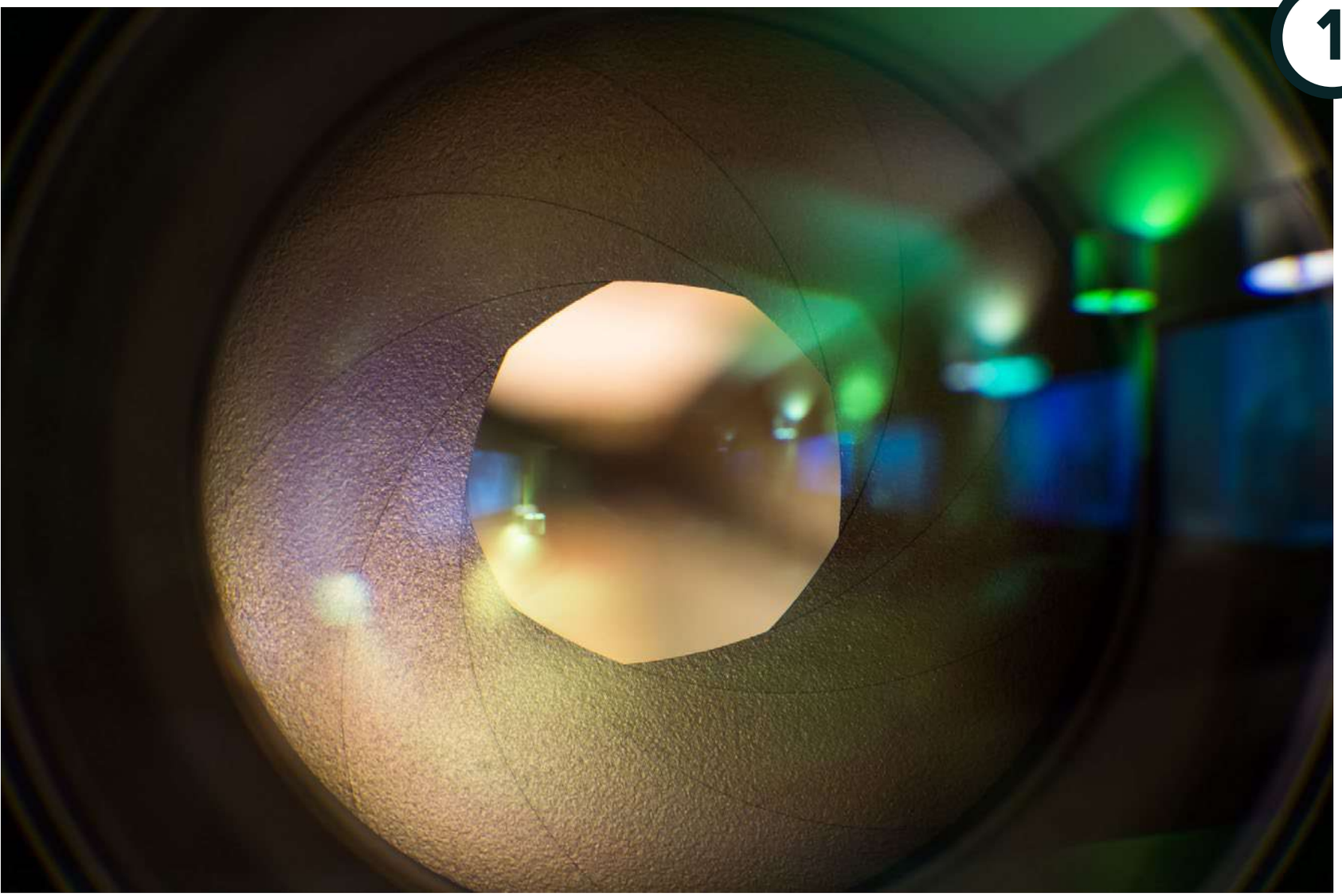

Photo by Dwayne Bent

1 APERTURE

If you rotate your PASM dial to A (this designation may vary by manufacturer), your camera is now set to shoot in Aperture Priority, or Av mode.

Av mode is one of the most commonly used camera modes, even by professionals.

It allows you to set the aperture while the camera decides the shutter speed.

So what is your ‘aperture’?

Larger apertures allow the use of lower ISO settings and faster shutter speeds.

Aperture is the variable opening inside your lens that allows a designated amount of light to pass through to your camera.

While the shutter controls the length of time that light hits your sensor, the aperture controls the amount of light.

Aperture is measured in f/stops: f/1, f/1.4, f/2, f/2.8, f/4 and so on. The numbers are related to the powers of the square root of two, and are found by a mathematical equation (that I have absolutely no interest in relating).

It is important to note, however, that each f/stop lets in twice as much light as the one after it.

Lenses with a low maximum f/stop, such as f1.2, allow in more light, and are called ‘fast’ lenses. They are usually more expensive and are highly prized by photographers. This is because they allow the use of a lower ISO or a faster shutter speed. Also, with the right focal length and a wide aperture you can blur the background of your images in a pleasing way. Conversely, using a large f/stop, like f/22, will result in a large depth of field, making more of the image in focus. This is commonly used in landscape photography, where we usually want the entire image to be in focus.

On cameras with a PASM dial, once you have rotated the dial to A, you can usually control the aperture with a dial near your forefinger, or at the back of the camera. You will also use this dial to control the aperture when you are shooting.

Photo by David Veldman

2 SHUTTER SPEED

The next in the 'big three' is shutter speed. Shutter speed is very simple – it's the amount of time that your shutter stays open to allow light to pass through and hit the sensor.

Rotate the dial on your camera to S (this may vary by camera manufacturer) and you are in shutter priority mode, or Tv (Canon designation).

While adjusting the brightness of your exposure, the shutter speed also has an effect on motion.

A very fast shutter speed of 1/4000 will perfectly freeze motion. This is useful for sports or other action shots. A slower shutter speed, like 1/4 of a second will blur motion.

I personally love to shoot long exposures, sometimes using shutter speeds over a minute long!

3 ISO

For the last of the big three, we're leaving the PASM dial.

On many cameras, you will find a button specifically labeled ISO. On others, you may have to enter a menu to change the ISO value. Some professional grade cameras even give ISO a dedicated dial.

Like aperture and shutter speed, your ISO will change your exposure, or how bright the image is.

However, there is a cost to using a high ISO number (increased sensitivity).

Most cameras start with a base ISO of 100 or 200.

These values were originally created during the film era. Photographic films with a low chemical sensitivity to light were labelled ISO 100 or 200. This enabled a wider aperture or slower shutter speed to be used. An 800-speed film was much more sensitive to light, and allowed users to shoot in lower light. The downside, during the film era, was that the higher the ISO sensitivity, the more film grain was introduced, and that led to a less sharp image.

Digital cameras can now utilize a much higher ISO than film. Most entry level DSLRs have the capability to use at least ISO 6400.

ISO is adjusted by changing the sensitivity of the digital sensor. Unfortunately, the cost of using a high sensitivity ISO with a digital camera is called noise – the digital equivalent of film grain (although perhaps less pleasant looking).

While noise-free images are nice, make sure you don't completely avoid using a high ISO. A noisy shot is better than a blurry one from a slow shutter speed.

Almost all digital cameras have the ability to use 'Auto ISO.' This is a very useful function, as it allows the camera to choose the ISO for you, while you alter the f/stop and/or the shutter speed. You will find this in the same menu as the ISO sensitivity selection. Some more advanced cameras allow you to set upper and lower limits for the Auto ISO – this keeps the setting within a range that you're comfortable with.

Photos by Cary and Kacey Jordan

The image on the left is using ISO 200 while the one on the right is using ISO 6400. Take a look at the brown background, you will see a noticeable difference in noise. As ISO increases, sensitivity to light as well as image noise also increases.

Consult your camera's manual to see what metering mode options are available to you.

4 PHOTOMETRY (METERING MODES)

"Photometry! First this guy was talking about the square root of two and now this?"

Don't worry, photometry is actually quite simple. It's essentially another word for 'metering.'

Metering is how your camera determines the exposure. The camera will use its built-in light meter to give you an indication of whether you are properly exposed, overexposed, or under exposed.

Different cameras have different metering modes (patterns) – make sure you consult your manual to understand the options available to you.

Most cameras feature spot metering, which takes a light reading from one small part of the frame. This can be useful to ensure that an important area of your picture is properly exposed.

If I hadn't used spot metering in the photo on the next page, the subject's face would have been in heavy shadow due to the bright backlighting.

Another common metering option is called 'averaging or matrix.' This mode attempts to create a well-balanced exposure by averaging the darkest and lightest parts of the scene. It's particularly useful for landscape shots.

Note: If you'd like to improve your landscape shots, grab a copy of Photzy's best-selling premium guide. Complete Landscape Photography.

Photo by David Veldman

Exposure compensation will adjust exposure settings to give you a lighter or darker shot than what your camera gives.

5 EXPOSURE COMPENSATION

You have some ideas on how to use your metering system, but what if, despite your best efforts, the camera creates a poor exposure anyway? This does happen. Strange lighting can trick the camera's metering system, and sometimes you simply want a lighter or darker shot.

Under these circumstances, you can simply dial in as much positive or negative exposure compensation as you need when using auto shooting mode such as aperture priority, shutter priority, or program mode.

Not every camera will have the exposure compensation function. However, most do, and increasingly camera manufacturers are making the exposure compensation controls more direct and easy to access.

Most of the time the exposure compensation function will range from +3 stops to -3 stops, usually in 1/3rd stop increments. The compensation will occur differently depending on which shooting mode you're using. For example, in aperture priority the compensation will occur in the shutter speed setting – unless you're using Auto ISO, in which case the camera may alter the ISO sensitivity. If you're in Shutter Priority Mode, then the reverse happens – the aperture is adjusted.

There is an additional advantage to the live preview function on some cameras. As you dial in the exposure compensation, the EVF (or LCD) preview will get darker or lighter in response.

Try different aspect ratios. Using another frame can give your creativity a boost.

6 ASPECT RATIO

I've written about aspect ratio before. Aspect ratio is the difference between the length and width of an image.

Think of HDTV vs. the old, almost square television sets. I personally love shooting in different formats, from square to widescreen. Many people choose only to shoot in the native ratio that their camera is designed for. Others will decide to crop while post processing.

If you do want to change the aspect ratio of the camera, you will usually find it buried in a menu.

A few camera manufacturers have made this choice more direct; some even place a direct switch on the camera body.

You may also find your choices limited depending on the type of camera.

If possible, try out the different aspect ratios on your camera. Seeing the world in another frame can give your creativity a boost.

7 AUTOFOCUS SETTINGS

Even after you've been shooting for a while, it's still possible to mess up your autofocus settings.

In fact, as you begin to use more advanced cameras, you will find an almost bewildering array of options: zone control, release priority, wide tracking, continuous – the list goes on and on.

All of us at some point have snapped a shot, looked at the LCD screen, and then realized we were in manual focus mode – at least I know I have! Becoming familiar with your autofocus system is key to getting the shot you want, when you want it.

Single focus is perfect for general photography while continuous mode is great for action shots.

Regardless of manufacturer, most enthusiast or advanced cameras have at least three options: single, continuous, and manual focus modes.

Single focus occurs once when you half press the shutter button, and it then locks. Continuous focus mode continuously focuses non-stop, even as the camera is firing. Manual focus mode allows you to take full control over your focus; you must focus the lens yourself.

For general photography, single focus is perfect. Save continuous mode for action shots, and manual focus mode works great for close-up work or poor lighting.

Of equal importance is the knowledge of setting the size and position of your autofocus points.

Some cameras offer a dedicated joystick to move the autofocus point around the frame, while others require a little menu diving. Many manufacturers now allow you to choose your point using a touchscreen. Read your manual and make sure you are comfortable with placing the autofocus point where you need it.

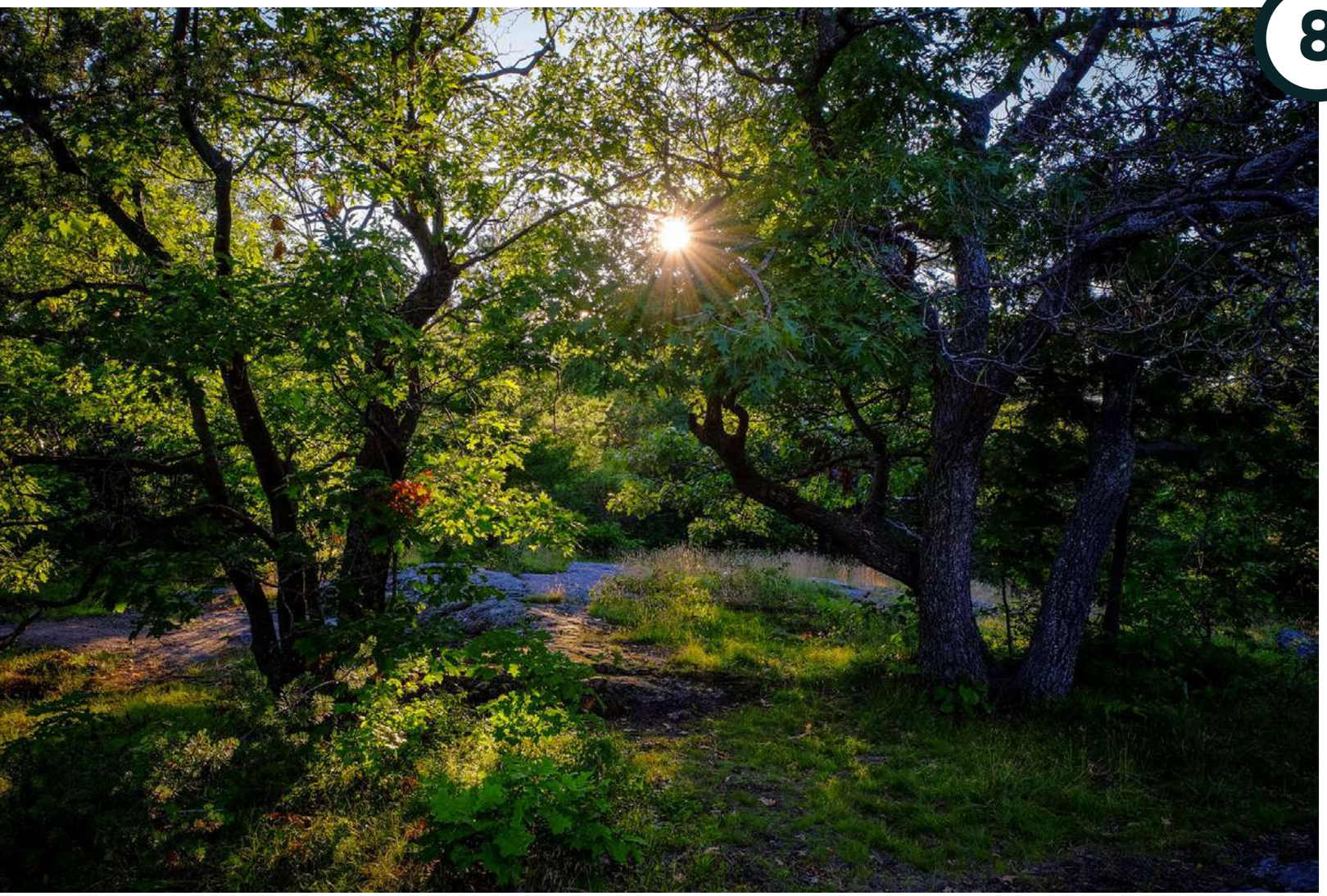

Photo by David Veldman

8 QUALITY (RAW AND .JPEG)

Shooting the raw camera file format has many advantages.

When I got my first camera, I shot .JPEG for some time before deciding to give the whole ‘post-processing’ thing a try. Since that moment, I have shot raw continuously.

Regardless of which file format you choose, you should memorize the location of your quality control setting.

This way you can switch between raw, .JPEG, or raw + .JPEG as needed.

Raw + .JPEG is especially useful as it gives you the best of both worlds. Some photographers may complain that it wastes memory; however, digital storage has become so cheap that it shouldn’t concern you.

Others may tell you that you should only shoot raw all the time, but the image on the left was captured in .JPEG, and I wouldn’t say that it suffered because of that. For some situations, shooting .JPEG allows a quick, easy format that requires less post-processing.

The AE/AF Lock will hold the metered exposure or focusing point even after you recompose the frame.

9 AE/AF LOCK

Another common feature on modern cameras is the AE/AF lock buttons. These features are all too often overlooked.

AE means auto exposure. When you are shooting in Program mode, aperture priority, or shutter priority, your camera is choosing settings required to properly expose the scene. The AE lock button simply freezes the camera's thought process at a given moment. This "locks" the exposure to that last setting.

AF lock is even simpler. The camera will auto-focus on a particular point. By using the AF lock feature the focus mechanism will stay locked on the position, even if you reposition the camera. I frequently use the AF lock button in landscape photography.

Sometimes the AE and AF controls are doubled up on the same button, and you will have to assign which function the button will utilize.

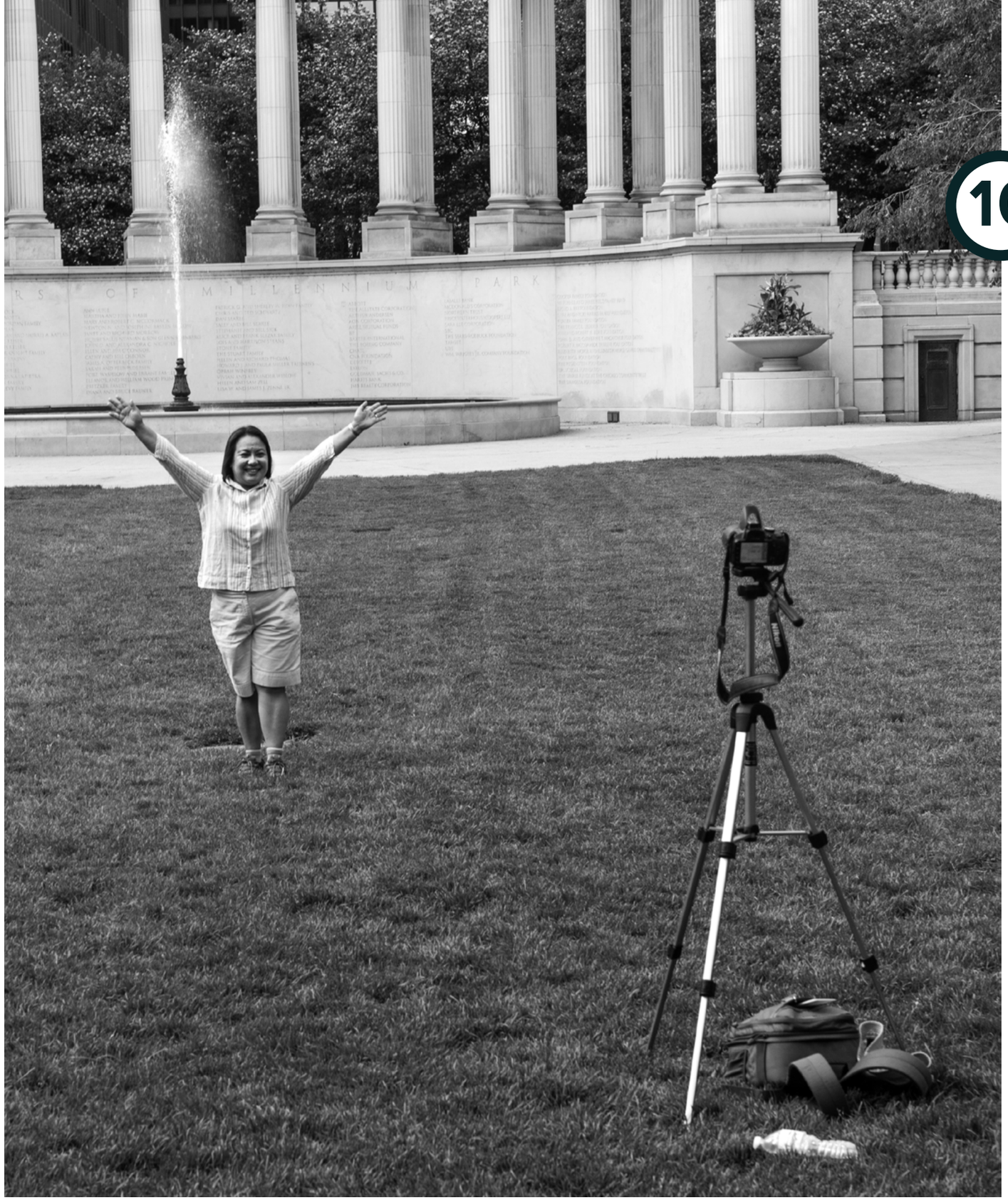

Photo by Adam Singer

10 SELF-TIMER

The ‘self-timer’ is a camera function that will delay the release of the shutter by a pre-set number of seconds. Two seconds and ten seconds are the most common settings. Some cameras offer a customizable number of seconds.

I have never run into a camera that didn’t have the self-timer feature.

There is a good reason for this. There are several critical uses for a self-timer that makes them indispensable.

You can use the self-timer to take a picture with you in it. I’ve lost count as to the number of times that I’ve placed my camera on a tripod, set the timer, and rushed into the frame to join my wife. You don’t have to take that awkward angled selfie!

A self-timer is also a key tool when taking longer exposures on a tripod. When shooting an exposure with a slower shutter speed, even the vibrations from pressing the shutter button can blur your image. After you’ve framed your shot, set the self-timer and let it trigger the shutter release. This will keep your shots as sharp as possible.

CONCLUSION

There are many other features that I could discuss regarding camera functions, such as WiFi, back-button focus, white balance, and film simulations – the list is long. However, this is not meant to be a replacement for your camera manual, but simply an initial guide to key features that you need to be aware of.

As I mentioned in the beginning of this guide, read your manual. Know your camera inside and out. Play with it when you have spare time. Get used to the controls until you can operate them in the dark (because you may have to some day).

Always remember, while your vision dictates the image captured, you can't capture it without a camera.

> **Note:** Expand your knowledge and improve your skills in photography through Photzy's collection of premium photography guides. Visit Photzy's Marketplace page for more details.

Hey there!

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About the Author

David Veldman wants to be a better photographer, and he hopes you will join him on the journey of learning. Best of all, he's doing it on a budget! When not taking pictures David and his wife are hiking, snowshoeing, or discovering new culinary delights.

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