

# The Nine Biggest Mistakes People Make When Buying a Digital Camera

By Ed Snyder



## About the Author

Self-taught in film photography, Ed Snyder has been making photographs since 1975. He began exhibiting in 1982 through the Phoenix Street Gallery in New York. Since moving to Philadelphia in 1984, he has exhibited his work through such venues as Nexus Gallery, the Philadelphia Sketch

Club and the Plastic Club. A member of the Philadelphia Photographic Society, Mr. Snyder is represented by Bergen Galleries in New Orleans, the Sande-Webster Gallery in Philadelphia, the Photo District Gallery in NYC, and Gothic Creations in New Hope, PA.



The age of digital technology has made it necessary for many experienced photographers to relearn their craft. The journey is painful for both the novice and the veteran. Mr. Snyder's forthcoming book, "Digital Cameras for the Impatient," is a response to those who've asked him for (and graciously received) photographic advice brought on by this technology change. Mr. Snyder enjoys teaching and writing, with much of his energy devoted to educational endeavors in the biomedical engineering profession. In 2006, he began posting articles on [www.photographercoach.com](http://www.photographercoach.com), in order to help photographers cut through the confusing digital hype. The book is an expansion of this effort, meant to benefit photographers at all skill levels.

Most photographers have specific areas of interest, and one of Mr. Snyder's is cemetery statuary. Having others find meaning in his work is an unexpected gift. Photography broadens the appeal of this unique architecture, reacquainting us with the Victorian mourning arts. A recent show of his New Orleans cemetery images benefited the victims of Hurricane Katrina, with profits donated to the Red Cross Relief Effort. Many private collections are home to his work, as are institutions such as Philadelphia's Historic Laurel Hill Cemetery and (the art and design network) InLiquid. In a related area, Mr. Snyder writes extensively on how art and photography merge with society's desire to come to terms with death and dying ([www.Stoneangels.net](http://www.Stoneangels.net)).

Mr. Snyder is a Biomedical Engineer at Thomas Jefferson University Hospital in Philadelphia, where he is involved in the research, development, and clinical practice of advanced cardio-pulmonary life support for babies. He has authored many publications on the technological aspects of this area of medicine. Working with infant life support provides a "beginning of life" perspective needed to help devote photographic energy to end of life situations.

# The Nine Biggest Mistakes People Make When Buying a Digital Camera

I've been a photographer for 30 years, primarily digital for the last five. I had to get my feet wet like everyone else when it came to learning this new technology. Once they learn I am a photographer, people will ask me questions about cameras, so I felt the need to educate myself on the topic. Over the past five years, I've noticed a pattern with peoples' problems with digital cameras, so I put together this booklet. I want to share this experience with you in order to minimize your pain and save you hundreds of dollars in the long run.



**From my experience, these are the nine biggest mistakes people make with their digital cameras—mistakes that can cost you hundreds of dollars when buying one!**

1. Believing salespeople and advertisements
2. Pixel counting (more megapixels doesn't necessarily mean a better image)
3. Thinking that a “fully automated” or computerized camera requires no input from you
4. Believing the Mode Controls make things easier
5. Assuming that because the image on the LCD looks great, so will the final picture
6. Expecting image stabilization to correct for any camera or subject motion
7. Thinking zooms will always allow you to get that distant shot
8. Not trying out the camera in the store before you buy it
9. Using Consumer Reports as your only buying guide

I'm going to explain these in some depth, but first I just want to say that no matter how complicated a camera may appear, its basic function—whether film or digital—is simple and unchanged: an image is acquired on some sort of light-sensitive receptor. There are only three basic camera settings used to produce a photograph. Understanding how they work will not only allow you to take better photographs (with any camera), but will also help you make better decisions when buying a camera.

## The three basic camera settings used to produce a properly exposed photograph:

1. Shutter speed
2. Aperture
3. Light Sensitivity

So “SAL” is the only thing you need to concern yourself with in order to properly expose an image. Proper exposure simply means the image is not too dark (underexposed) nor too light (overexposed). Once you understand how Shutter speed, Aperture, and Light Sensitivity interact to produce a properly exposed image, you just need to learn how to adjust them. Forget all those crazy modes and special features. As cameras become smaller and more menu-driven, they become more difficult to use. Manufacturers think they’re making it simple for the user by creating a “Baby Mode” or a “Fireworks” setting. But you know what? If you don’t understand SAL, I guarantee those modes will not work for you!



Here are some simple definitions. Keep in mind, photography is all about light, or more specifically, using light to record an image. The less light available, the more technically difficult it is to record an image. That’s why just about any camera can take a great picture outside on a sunny day. Try shooting indoors at a rock concert, and you get less than stellar results (this is the true test of a camera’s mettle—how well it performs in low light conditions).

1. **Shutter speed** - Adjusts the amount of time light is allowed to hit the image sensor (the “shutter” is literally a small hinged door that is electronically opened and closed)

2. **Aperture** - The opening through which light enters the image sensor area (the size of this opening is adjustable—if you’re shooting in low light, a large opening lets in as much light as possible (to avoid underexposure); if you’re shooting in bright light, a small opening limits the amount of light hitting the sensor (to avoid overexposure).

3. **Light Sensitivity** - Currently referred to as ISO (formerly ASA), this setting makes the image sensor more or less sensitive to light—low ISO of 100 for bright sun, high ISO of 400 for dim light. Rationale is the same as that of Aperture, you want a proper exposure.

Most cameras have an automatic mode in which these three settings are automatically adjusted. Which, again, is fine outdoors in the bright sun. Any camera will perform well under these circumstances. Challenge it under low-



light conditions (e.g. indoors at a birthday party) and the wheels fall off. Believe it or not, most cameras cannot take a decent photo under such conditions—they require input (adjustments) from the user. A solid understanding of Shutter speed, Aperture, and Light Sensitivity will allow you to make these simple adjustments, despite the camera's many buttons and menus!

## **Consumer Reports as the Source of All Wisdom and Knowledge?**

A recent cover of Consumer Reports (November 2007) boasts "Best HDTVs, Digital Cameras, Laptops, and more." For many people, Consumer Reports is their purchasing bible. They buy nothing without first consulting this magazine. And to an extent, this is good. When it comes to buying tires or toothpaste, you may want to know all the players and which performs best.

However, Consumer Reports has limited usefulness when it comes to recommending digital cameras. When I saw this recent article filled with notions, half-truths and opinion, I finally decided to speak out. If you base your entire purchase decision on Consumer Reports, you'll most likely end up wasting money and being dissatisfied with the product.

### **Here are the most important things you should know about digital cameras:**

1. They are fun and compact and meet our need for instant gratification.
2. They shorten the learning curve.
3. They take fine pictures outdoors on sunny days.
4. Resolution (or pixel count) above 5 MP for a point-and-shoot camera is a waste.

The first point you already know. The second is fairly obvious—the LCD display shows you the results of your photo instantly. The main advantage of digital cameras over their film counterparts is that digital technology shortens the learning curve. The acquired image is displayed for you to see. If you don't like what you just shot, learn enough about the controls and settings so you can make an adjustment and take a better picture. But what's with points three and four?



## How Consumer Reports Misses the Mark

Although Consumer Reports touts itself as unbiased, it perpetuates the myth that a \$300 digital point-and-shoot camera is what everybody either has or needs. Fact of the matter is that even with amazing bells and whistles, the pictures produced by these expensive digital cameras really aren't much better than those made by a \$5 throwaway film camera. And in some cases, digital is worse!

So is digital photography a sham perpetrated by the camera manufacturers? Partly, yes. Although digital cameras are very sophisticated and amazing little products, the images they produce are usually inferior to images produced with film. This applies to ALL digital point-and-shoots as well as consumer-grade (under \$3,000) digital SLR cameras.

The reason? Photographic film has near-infinite resolution, and most digital image sensors have nowhere close to that. Consumer-grade digital imaging technology is only slowly catching up with film technology. The original goal of digital imaging was to emulate film, then, if the gods are smiling, surpass it. Consumer-grade digital image sensors are nowhere near that point.

### **What is Consumer Reports good for?**

Two things:

1. Listing the relative prices and features of the product; and
2. Providing an indication of its reliability, based on input by Consumer Reports readers who've purchased the product

Is it useful to know that one camera has a three-second shutter lag while another takes the picture as soon as you press the shutter release? Yes, and Consumer Reports will indicate such an attribute in its product comparisons, giving you a chart of cameras rated top to bottom. Wouldn't you think "Picture Quality" would be the driving force when it comes to choosing a camera? Consumer Reports tells us in this report, "If you need high resolution and impeccable quality, choose one of the high resolution [cameras]." But if you look at their list of 19 point-and-shoots, both top and bottom-rated cameras have 10 MP resolution! Hmmm, but what about "Picture Quality," whatever that is? The top-rated camera (Canon Powershot A640) on their scale of Excellent—Very Good—Good—Fair—Poor, gets "Very Good," while the bottom-rated one (Olympus Stylus 1000) has "Fair" Picture Quality. How is the reader supposed to interpret the determination that both 10 MP cameras have far different "Picture Quality?"

The best way to really see if a camera meets your needs is to buy it from a retailer having a lenient return policy. Buy it, try it; print up some images. If you don't like what you see, return

the camera and try another. You want the camera to be easy to use under the conditions that you intend to use it. Having someone attach numbers to its attributes has only limited usefulness.

### **Facts avoided by Consumer Reports, which lead to the nine biggest mistakes people make with their digital cameras:**

1. **You need to try a camera to see if it will work for you.** Most people simply want to whip the camera out and snap a spur-of-the moment picture. Because most cameras take fine pictures outdoors in sunlight, try snapping some quick pictures in the store where you're looking at cameras. If you expect to be using it to take snapshots of friends at parties, turn the camera on and take pictures of the customers around you. See how long the camera takes to turn on, focus, and charge the flash. If it has image stabilization, shake it around while you're shooting images and see how well it compensates. Buying a camera is a very personal decision—the camera should meet your specific needs. So test it under the circumstances in which you intend to use it. If it balks, it's not the camera for you!

2. **There is no such thing as a fully automatic camera.** And the term “point-and-shoot” usually only applies to taking pictures outdoors on a bright sunny day. Any camera will perform well under these circumstances. Challenge it under low-light conditions (e.g. indoors at a birthday party) and the wheels fall off. Believe it or not, most cameras cannot take a decent photo under these conditions—they require input (adjustments) from the user. Sure, most will auto focus well, they also require that you compose the picture yourself and understand the three principles for proper exposure (mentioned earlier): Shutter speed, Aperture, and Light Sensitivity.



3. **Many people are not computer literate and have never used an SLR.** Why does this matter? There's a lot of jargon associated with photographic and computing technologies. Currently, the two are being smashed together. Luckily for you, you've just learned the basic photographic principles of the basic standard camera type, the Single Lens Reflex (SLR). These are Shutter speed (in fractions of a second), Aperture (variously-sized lens openings are referred to as f-stops), and Light Sensitivity (ISO rating). The people who write operating manuals and camera reviews will assume you understand the terminology because it makes their job easier. It's far simpler to tell you that you can fit twice as many JPEGs on a memory card if you lower the resolution than it is to explain what that means! Pretending to understand the terminology is something you don't want to do. To me, hearing sales people lingo-slinging their customers is like throwing lighter fluid on my campfire!

#### 4. Pixel-counting is a great way to jack up the price.

However, it won't necessarily improve your photos.

Realize that for snapshots, 3 MP is fine. All things equal, you'd be hard pressed to see a difference between a 3 MP image and a 7 MP snapshot. The reason? The overall size of the image sensor in a pocket camera remains fixed, regardless of how many pixels you jam into the space.

But wait—the sales person said doubling the resolution (typically referring to the pixel count) doubles the image quality! Bullfeathers. If you do not know how to use your camera to take a good photograph, a huge number of megapixels only ensures that your camera can store a bad image with great accuracy! To get better image quality, you need a camera with a larger image sensor and a better lens, e.g. a DSLR. We'll talk a bit more on pixel count and resolution at the end. Also because the size of the image sensors in these two camera types is different, comparing their resolutions is not accurate. A 5 MP point-and-shoot will not have the same image quality as a 5 MP DSLR, it will have far less.



**5. So What Determines Image Quality?** Certainly not brand. If you were a big Nikon fan in the film days, you'll be quite disappointed in that brand's digital pocket cameras. Now that most image sensors are above 5 MP resolution, image quality is determined more by optics, the overall size of the image sensor, and the image processing system rather than pixel count. Most pocket cameras have bad lenses. Panasonic (Lumix) uses Leica lenses, one of the best on the planet (something not mentioned by Consumer Reports). Back in the film era, if you wanted to upgrade your image quality, you could buy a roll of higher-quality film for a couple extra dollars. That's how simple it was! Now you have to do an entire platform upgrade, e.g. from point-and-shoot to DSLR.



**6. Pocket camera technology has just about plateaued.** With every price increase and technological "innovation" of the digital point-and-shoot camera, image quality stays the same. You're simply paying for more relatively useless bells and whistles like "face recognition" and "baby mode." This is due to the fact that with overall camera size diminishing, overall image sensor size cannot grow. As mentioned earlier, if you want improved image quality, you need a camera with a larger image sensor, e.g. a DSLR. If you are tempted to pay more than \$300 for a pocket digital camera, you might as well just take that extra money, put it in a bag and leave it on a bus.

7. **Manual controls on pocket cameras are virtually useless.** For instance, on many, you need to drill down through several menus to find the manual focus control (which is next to about impossible to use).

8. **Size matters.** Everyone likes small and cute. It's very cool to have a credit card-sized camera to slip into your purse or pocket. Two problems here: 1) the smaller the camera, generally the more difficult it is to hold it steady during an exposure; and 2) as manufacturers try to reduce overall camera size, they cannot increase image sensor size (thereby ensuring that, given the state of imaging technology, image quality cannot get any better).

9. **Mode Settings.** The fact that there are things called "mode settings" should give you the first clue that a fully automated camera is just not that. Why are you expected to choose a particular "Scene" mode while the camera is set to "Auto?" Because the camera is not smart enough to adjust itself to make the best exposure under all conditions. And there are many conditions under which the camera is physically incapable of taking a good picture, for instance shooting indoor birthday parties without a flash. While the technology for bells and whistles advances quite rapidly, the technologies for actual image recording move at a glacial pace. Not because there's no money in it, but because it's sometimes difficult to butt heads with the laws of physics. For example, photographic film and digital image sensors have physical limits as to the amount of light that must be present in order to record an image. If the available light is dim, then the film or image sensor will have a difficult time recording an image. The image will appear grainy (for film) or noisy (for digital).



What if you want to take a picture of something not specifically shown on the camera's mode menu? You have two choices, either: 1) understand what all the camera's modes do and choose the one that best fits your situation; or 2) set some of the controls yourself. This latter choice isn't as daunting as it may seem. It only means setting the camera's Shutter speed, Aperture, and Light Sensitivity depending on what you want to photograph. Fast moving subject? Choose a fast shutter speed to freeze motion. Doing a portrait? Choose a wide aperture to blur out the background.

10. **Zoom lenses.** Optical zoom lenses produce higher-quality images than digital zooms, which only magnify the original acquired digital image. According to Consumer Reports, the main disadvantage of zoom lenses (greater than X3) is the weight and bulk they add to the camera. As a longtime photographer, I have to say that the coolest things about cameras are instant images and zoom lenses. Zooms as long as X10, however, are virtually useless! Unless conditions are very bright sunlight, you'll need a tripod to hold the camera steady during exposure (hence the incorporation of image stabilization in many cameras).



11. **Image Stabilization.** There are many types of image stabilization, and some work better than others. The principle implies automatic optical or mechanical adjustment to compensate for camera movement. At its worst, image stabilization is not even that. Fake image stabilization (referred to as anti-shake or anti-blur) simply jacks up the light sensitivity (ISO) so that a faster shutter speed can be used (Light Sensitivity is one of the three simple photographic principles). This will add noise to your image.

At its best, image stabilization only allows you to hand-hold a shot one or two shutter speeds slower than you normally could. It does NOT guarantee clear shots in all conditions! For example, most people can successfully hand hold a camera at a shutter speed 1/60th of a second or faster. Slower than 1/60th of a second and you're likely to blur the image. With image stabilization, perhaps you'll be able to get a clear image at 1/30th or even 1/15th of a second. When you add a long zoom, these numbers go out the window. It's much more difficult to hand-hold a camera with a 200 mm zoom (approx. X10 zoom). With such magnification, most people could only hand hold the camera at a shutter speed 1/200th of a second or faster!

## To Summarize

I've made many mistakes when buying digital cameras, mainly because I read incorrect information. Hopefully this brochure will help you avoid those mistakes.

Aren't digital cameras supposed to be these sophisticated marvels that always take great pictures? If so, why do I need to learn how to use the camera? Well, with all due respect to sales people and marketing campaigns, we get sold a bill of goods. The fact of the matter is that other than digital cameras using electronic image sensors instead of film, there isn't really much difference between an automatic digital camera and an automatic film camera! Because there really has been no significant improvement in the actual process of acquiring the image, we still need to pay attention to the three basic principles of properly exposing a photograph—**Shutter speed, Aperture, and Light Sensitivity**.

**How should you buy a digital camera?** It's certainly not a bad idea to check Consumer Reports first. Get an idea of what products are available in your price range. Then, go to a camera retailer and try some! Because most people want a camera to take pictures of indoor gatherings, turn the camera on and shoot the other customers. Did the flash come on when it was supposed to? Did the focusing system quickly lock on to your subject, or did it just hunt? Was the picture captured quickly when you pressed the shutter button? Activate the anti-shake button and take a picture while shaking the camera. Did it make a difference? These are the conditions under which most cameras fail to perform—any camera will work fine outdoors in the bright sun!

## Digital Photography Book Released This Summer

This summer, Ed Snyder will be releasing his new ebook, **Digital Cameras for the Impatient**, which will teach beginner photographers everything they need to know to start shooting stunning photos with their digital cameras.

Here's a peek of what's inside:

- how to choose the right camera for your needs
- how to take the best pictures with all those different pre-programmed modes like "Fireworks", "Portrait" and "Baby" modes
- which camera gear (lenses, batteries, memory cards, etc) you'll need
- how to ensure your pictures aren't blurry
- how to use a flash so you avoid common problems like red-eyes and washed out subjects
- how to get great portrait shots
- where to print your photos so they look great
- and much more

Digital Cameras for the Impatient is divided into essentially two parts. The first half of the book tackles photography basics like deciding which digital camera is right for you and which gear to buy, understanding the different settings on your camera.

The second half explores the current technology and how digital cameras can help you shoot better pictures. Topics covered include flash photography, photo composition, lighting, editing your photos on your computer, and the differences between point-and-shoot cameras and SLRs.

To be notified when this new book is available and for more free digital photography tips, visit [PhotographerCoach.com](http://PhotographerCoach.com).