APPENDIX II

Digital Photography

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Of the myriad factors that have contributed to digital photography’s ongoing integration into professional applications, the two most influential are the personal computer and the photojournalist. The computer has become the hub from which we communicate, create, and interact. And the peripherals we use to connect to one another have evolved in tandem with it. Historically, photojournalists have always been early adopters of new technologies. In the mid-1920s, they were among the first to embrace the 35 mm film camera because it offered the ability to capture high-quality images without all the travails that came with the sheet-film cameras of the time. Similarly, photojournalists have transitioned to digital photography because it provides the freedom to record and deliver an assignment without the restrictions that came with processing and distributing film.

Today, commercial, fashion, and portrait photographers are embracing digital systems. In part, this is because digital photography allows for faster turnarounds of finished work product, but it is also because digital photography offers photographers a greater creative freedom to experiment, provides their clients with immediate proofs, and easily integrates images into design applications.
Exposure = Aperture + Shutter Speed

Aperture
Aperture is the opening in the lens that permits light to pass through it. Aperture is measured in f-stops. A larger f-number (e.g., f/16) indicates a smaller aperture, meaning that less light will pass through the lens opening to the image sensor. A smaller f-number (e.g., f/2.8) indicates a larger aperture or lens opening, thus allowing more light to reach the image sensor. A “fast” lens is one that has a smaller f-number, thereby allowing more of the available light to pass through a lens and for use of a faster shutter speed. A faster shutter speed captures action in low-light situations without the need of a flash, and still achieves the correct exposure.

Shutter Speed
Shutter speed is the amount of time the shutter has to remain open, or the digital sensor has to remain activated, in order to achieve the correct exposure. Shutter speed is measured in fractions of a second (e.g., 1/8, 1/125, 1/250); the higher the number, the faster the shutter speed.

Aperture and shutter speed always work in tandem. If you set your camera to aperture priority, you choose the aperture value and the camera selects the shutter speed accordingly; if you select shutter priority, you choose the shutter speed and the camera selects the aperture automatically. Full manual control means you select both the aperture and shutter speed.

Depth of Field
Depth of field (DOF) is the distance between the nearest and the farthest objects that are in focus. It is important in achieving a strong compositional narrative because it establishes a visual and emotional connection between the subject and the foreground and background elements.
FIGURE A2-1 A large DOF provides a global view of the subject's relationship to all the elements in the foreground and background.

Achieving a large DOF depends on the lens’s focal length and f-number. A telephoto lens, or a zoom lens set to its narrowest viewing angle (largest focal length), compresses space. A wide-angle lens, or a zoom lens set to its widest viewing angle, increases what will be seen in a frame, providing the opportunity
for a larger depth of field. The f-number you use also affects the DOF: as you decrease the f-stop (use a larger f-number), you increase the amount of the depth of field. An f-stop of 8, a common f-number used to achieve a reasonably good DOF, will be greater than that which uses an f-stop of 2.8.

**FIGURE A2-2** Focal length set at 14 mm; aperture set at f/7.1.
There are times when too much DOF becomes distracting and confuses the point of focus in a photograph. When shooting portraits or a still life, or doing macro photography, use a shallow DOF so that the subject is the focus for the viewer. To achieve a shallow DOF, increase the f-stop (decrease the f-number) and either move closer to the subject if using a wide-angle lens, or zoom to a larger focal length to compress the space between the foreground and the background.

**FIGURE A2-3** Focal length set at 14 mm; aperture set at f/2.8.

**Framing and Composition**

The frame one chooses has a tremendous effect on how a photograph is experienced. Don’t always adopt the obvious frame: the better one understands how we, as a society, expect the visual world to be represented, the better one is, as a photographer, to engage his or her audience by contradicting these expectations. As I tell my students, “Make the abstract obvious!”
Horizontal Framing

Horizontal framing is the most common framing choice, because it represents how a photographer sees the world. As such, this style of framing provides a certain sense of stability and balance.

![Horizontal Framing](image)

**FIGURE A2-4** Horizontal framing.

Vertical Framing

I tend to use vertical rather than horizontal framing because I like to create tension by constricting the viewer’s perception of the subject. Vertical photographs also tend to be more dramatic because the height of the shot is greater than its width, which works against the viewer’s subconscious desire for visual balance.
FIGURE A2-5 Vertical framing.
Canted Framing

*Canted or angled framing* creates emotional and psychological tension. This technique follows a tactic developed by filmmakers who shoot the protagonist at angles that imply to the audience that all is not right with the hero, or with the situation he or she is in.

![Canted Framing](image)

**FIGURE A2-6** Canted framing.
Cropping

Henri Cartier-Bresson, the renowned photojournalist, did not believe in cropping photographs; he believed a photographer should be able to frame a shot from the outset, thus eliminating the need for later cropping. I agree with Mr. Bresson—one should not always rely on cropping to fix a poorly composed shot.

FIGURE A2-7 The power of cropping a photograph to tighten its point of focus or heighten the visual narrative cannot be overlooked.
Lighting

It is readily apparent that without light there is no photography. Yet knowing how to get the right amount of light for a properly exposed photograph is not all there is to understand about photography, digital or otherwise. Entire books have been written on how to use and manipulate light to achieve magnificent results; this section is limited to a few basics.

Natural Light

There are two types of natural light: *outside* and *inside*. Outside light tends to be diffused: even in the brightest sunlight, this light bounces off and is reflected through various surfaces and elements in the air. Humidity, albeit invisible to the naked eye, can filter sunlight in such a way that colors appear softened. Additionally, certain times of the day yield different lighting conditions based on the sun’s position in the sky. The phrase “the golden hour” refers to either dawn or dusk, when color temperatures are often at their coolest. Midday is usually when sunlight is at its whitest. Natural light includes daylight and cloudy.

**FIGURES A2-8, A, B** Photo 8A was taken at midday, with the sun directly above the subject, while photo 8B was taken at late afternoon, with the sun behind the subjects.
Artificial Light

Artificial light can be any source of illumination that is not from a natural source—a lamp, a candle, a neon sign, and so forth. Each source of artificial light has its own color temperature, which can add a certain cast to a photograph, providing emotional or psychological depth to the visual narrative—or ruining it. Generally, artificial light breaks down into the following categories:

- **Tungsten**: the typical incandescent bulbs in lamps. The color cast is usually warm, leaning more toward yellow or red.
- **Fluorescent**: cool light with either a green or blue cast.
FIGURES A2-9, A-C  In all three photos artificial light is used to emphasize the subject matter.
Flashes

There are two types of flashes, *built-in* and *external*. A built-in flash is most common with point-and-shoot and zoom-lens reflex (ZLR) cameras; some digital single-lens reflex (DSLR) cameras offer the convenience of a built-in flash. The camera generally correlates the burst of a built-in flash unit to the lighting conditions, but even at its best, built-in flashes tend to be overpowering and over-expose a shot. External flashes are added on to a camera or set up within the shooting space. They can be set according to the conditions of the environment and allow the photographer to execute more control than internal flashes.

Studio light

Studio lights can be tungsten or halogen, strobes or continuous light. In all cases, studio lights allow for the most flexibility and creative control. A simple studio lighting setup would consist of two *key lights* and perhaps a fill light, as well as a paper or cloth backdrop. You can add reflecting umbrellas to each light to soften the intensity of light falling on your subject, or a *softbox* which further diffuses the light to provide more even illumination.