Lighting for Digital

Dave Montizambert looks at *Metering* – a lost art?

A nsel Adams is often thought of as a master of light. This is not entirely true since he usually recorded existing light and did not actually create the light quality that he captured; he was a recorder of light rather than a creator of light. Now before any of you Ansel Adams zealots send me a letter bomb, let me clarify my last statement. Ansel Adams rarely did anything to affect the light before it struck the scene or subject(s), however, he did a great deal after the light struck – manipulating exposure for later development to increase or decrease scene contrast, altering time temperature and chemistry for processing, and a myriad of tricks during printing. In a nutshell he controlled lighting contrast after the fact, so you might say that he was a master of reflective controls and not of incident controls.

You can break down the creation of any image into two sciences, the *Incident* science and the *Reflective* science. *Incident* concerns itself with all the controls you might use to affect the outcome of an image before the light strikes the subject whereas *Reflective* concerns itself with all the controls you use after the light has struck the subject.

The science of *Incident* is the realm of lighting. Examples of *Incident* include decisions such as lighting ratios, choosing a soft-box over a bare strobe, moving a light in closer for softer light quality, gelling a light, setting flash to fill in shadows, bouncing on-camera-flash off ceiling rather than pointing directly at subject, etc.

The science of *Reflective* is the realm of the camera, and of image processing and manipulation, and of course final output. *Reflective* includes decisions such as deciding whether to capture RAW or JPEG, setting white balance on camera or during raw processing, altering camera setting to under/over or correctly expose subject, how you set the processing sliders or tone curve in your raw processing software, which printer to use, what printing paper you choose, which inks you put in your printer, altering image in Photoshop such as changing contrast/saturation/colour, what colour space you assign your image such as Adobe RGB or sRGB, etc.

When creating lighting on a subject or scene, it would seem that you would be solely concerned with incident controls and not reflective. This is not the case since the things you do to the image after you capture it will affect the decisions you make before capture. A perfect example of this is processing RAW files in your RAW processing software – the settings you use here should affect how you light the subject and how you meter if indeed you do use a meter.

Just as Ansel Adams had the photographic process broken down into three distinct but connected areas – The Camera, The Negative, and The Print – in digital we have three similar as well – Exposure, Processing and Output – and for those of
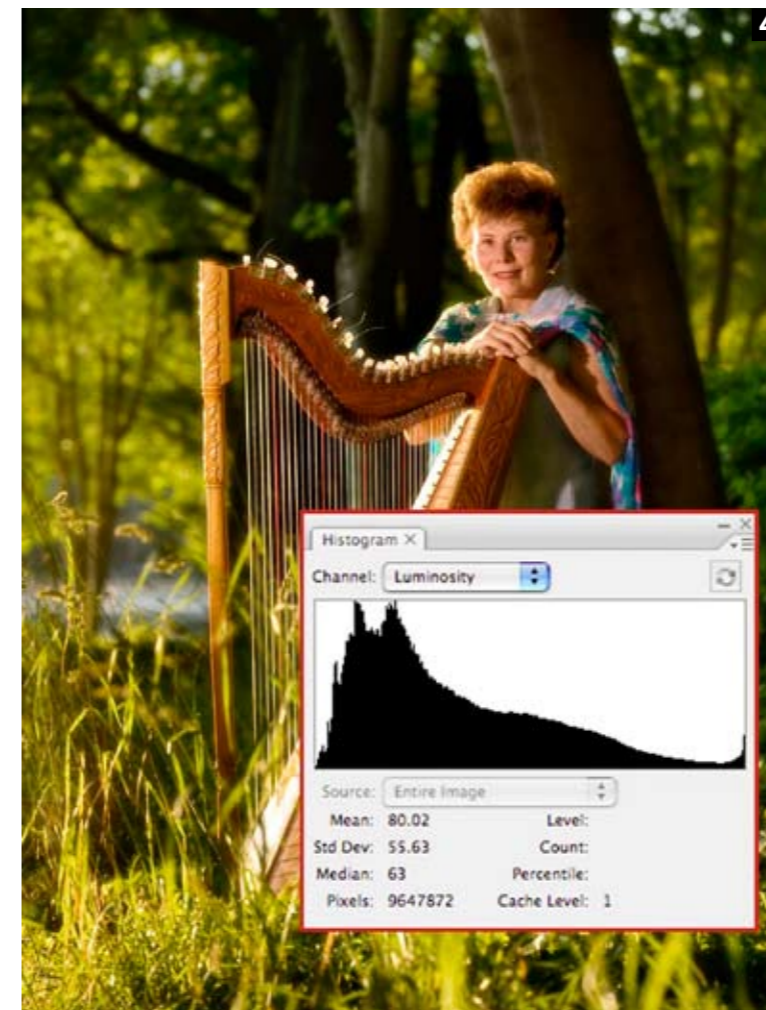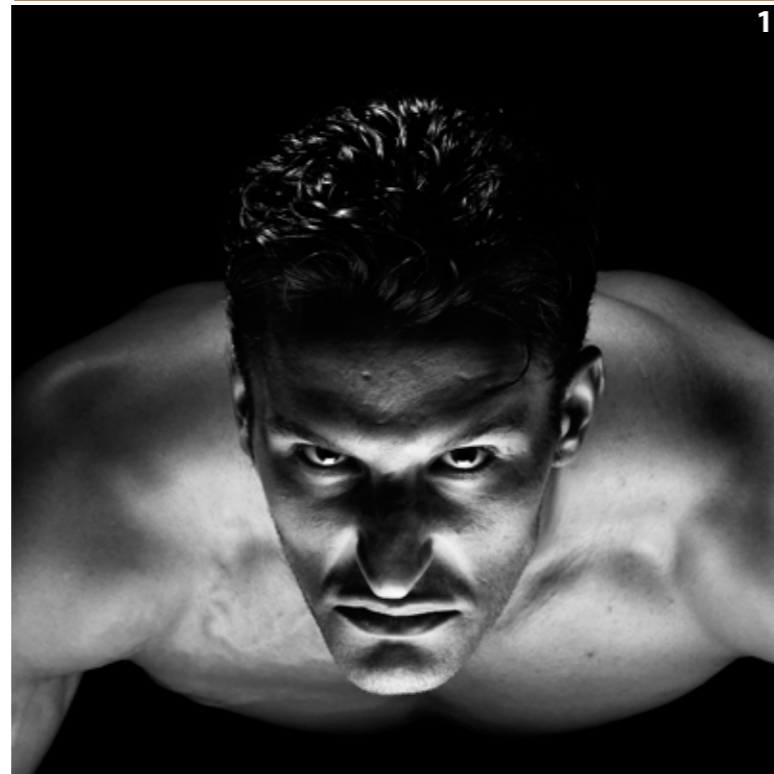
A histogram of any image is a bar chart (see image 4 – harpist histogram). The horizontal axis represents the tonal range of the image with the left side of the graph as 0 (zero) and the right side of the graph as 255 in an 8bit per channel image. The vertical axis represents how many pixels there are at each of the 255 tonal values. How high the bars or humps climb represents how many pixels exist at that particular tonal range. No one puts it better than Adobe Evangelist Julieanne Kost; she refers to a histogram as "Piles of Tiles". A digital image is really just a mosaic of square pixels not unlike the tile mosaics of ancient Rome depicting images such as battles etc. Imagine if you will, picking up your monitor with an image open on it and shaking it really hard (don't actually do this…please). If you were to shake it hard enough all of the pixels of your image will fall out onto the floor. Even though this is a mental exercise, be sure to imagine it with a low-resolution image so that you don't have to deal with too many pixels. With a very powerful imaginary loupe and a very small pair of imaginary tweezers, pick up and organise the pixels into stacks. Start by stacking all of the pixels that have a brightness value of 0 (zero) levels – this is assuming that there are any pixels of this value in your image. Next do the same with all the pixels that have a brightness value of 1 level, once again if any exist in the image. Do this same procedure for all levels of brightness starting from 0 (zero) and ending with 255 levels. The stacks of pixels should be side-by-side making a line. If any of the 0 to 255 brightness levels are not represented in the image, then be sure to leave a space in the line for that value. Once you have finished, assuming you were patient enough to spend several months sorting and stacking several million pixels, then put your head down on level with the line of pixel stacks so that you have a broad-side view, what you see will be a histogram of your image.

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us who actually create the lighting that we record, then there would be four areas – Lighting, Exposure, Processing, and Output.

When you create lighting, exposure comes at the end of that process. Technically speaking exposure is not really a part of lighting, however, it does play an important role; once you have perfected the lighting on a subject, set, or scene, it falls to exposure to accurately record your creation. Capturing the created range of lighting contrast in a single exposure used to require good metering skills; or does it still?

Metering is fast becoming a "lost photographic art" due to the sophisticated auto exposure features on most modern cameras and with the advent of digital capture with instant preview. However, for really serious lighting, solid metering skills are still key for getting perfect lighting ratios and accurate exposures in the shortest time possible. For instance, if a photographer shooting with a digital SLR camera wanted to make a backdrop a certain brightness, or fill in the shadows on a subject to a certain brightness, he/she would probably rely on viewing the results on the preview displayed on the back of the camera. They would fire the camera, view the preview, adjust the power or distance of the lights, then repeat this procedure as many times as necessary until the lighting looked right. Obviously this takes a lot longer than using a hand-held meter, where you would take a reading, adjust and read again. This is exactly how I controlled the brightness level of the shadows in Image 1 of the scary-looking bodybuilder – wanting high shadow contrast for a dramatic feel, meter readings helped me quickly adjust the fill light until there were 3 stops less light hitting the shadow areas than was striking the bodybuilder's fully lit areas. Metering is not only faster but is more accurate than relying on the LCD preview screen. The tiny preview screen on the back of a digital SLR camera is not good enough to make accurate lighting decisions from – with high-contrast lighting such as this bodybuilder image, can you imagine trying to judge from the tiny screen what shadow areas will hold detail and which ones will not? Also, using a meter to dial in preliminary ratios is also a lot faster than loading the captures over to your computer to preview.

All this is not to say that I am against instant preview – seeing the image immediately is one of the greatest things that digital gives us, it is a real bonus to see what is going on in addition to hard cold metering values. I believe that the most powerful stress-free way to create lighting is to meter first, quickly getting the lighting as close as possible to what you think you want, then capture and load over a preliminary image to view and read brightness values in your image processing/editing software on your recently profiled monitor. Obviously this is the ideal way to work and for some shooters such as photojournalist photographers, photojournalist-style wedding photographers and event photographers, who do not create lighting anyway, precise metering of the scene is probably not practical since "the scene" will have moved on by the time you have done the maths. Having said that, many wedding photographers constantly switch hats from being photojournalist to portraitist. For instance after having shot a series of images of the bride and groom racing down the aisle there may be time for a "set up" formal shot like in images 2 and 3. Here a quick reflective meter reading was taken off the backlit/sunlit

stained-glass window in image 2 to help find the perfect speed to "drag" the shutter for the perfect background exposure as in image 3 after the on-camera flash had illuminated the subjects correctly.

In addition to sophisticated in-camera metering and instant preview, most modern digital SLR's give us a histogram preview to judge our exposures. Unfortunately a histogram, see image 4, does not offer much information in terms of lighting such as lighting ratios – it is really more of a course graphic indication of how your overall exposure sits on a scale of 0 – 255 levels of brightness. See side bar for more info on how a histogram actually works.
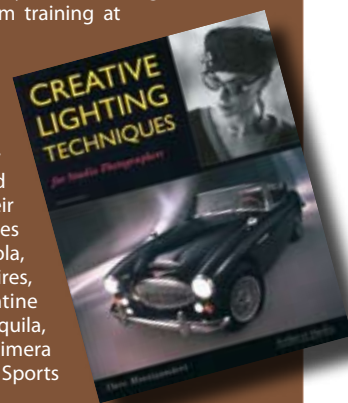
So it seems that we should not throw out our meters just yet, that many of us who actually create lighting would do well to pull their meters from amongst their mouldering film cameras and moth balls, give them a good dusting and a new battery, then slip them into our camera bags right next to the beloved digital SLR.

DAVE MONTIZAMBERT ON CD & PAPER

Dave lectures internationally on lighting, metering/zoning, and digital photography. He also writes magazine articles on these topics in North America and in Europe and has co-directed, co-produced, three humorous educational photography videos on metering, zoning, and lighting as well as written a 'how to' book on lighting for photography also published by Amherst Media. Dave's knowledge was gained primarily from training with Dean Collins at Finelight in California and from training at SINAR in Switzerland.

Dave Montizambert owns and operates Montizambert Photography Inc. located in downtown Vancouver. For the past twenty-three years Montizambert Photography Inc. has created photographic images to aid various organisations and companies with their communication needs. They have created images for clients such as: McDonalds Foods, Motorola, Atlanta Scientific/Nexus Engineering, Toyo Tires, Tri-Star Pictures, Warner Brothers, Constantine Films of Germany, Chevron Canada, Cuervo Tequila, the C.B.C., J&B Scotch, Hong Kong Bank, Chimera Softboxes, Tsing Tao Brewery of China, No Fear Sports Gear, Kodak, and Canada Post.

For more Photoshop tutorials by Dave check out ***http://www.software-cinema.com***

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