



# Processing the Digital Image

the  
4 PHASES

*Introducing Bob DiNatale's*  
**PhotoCycle™**

# Processing the Digital Image

## The 4-Phases

*Introducing the*  
**PhotoCycle™**

Bob DiNatale



CERTIFIED EXPERT  
Photoshop® Lightroom

X-Rite *Coloratti*

This book has a complimenting website  
[www.ProcessingTheDigitalImage.com/](http://www.ProcessingTheDigitalImage.com/)

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Knowledge is out there - it is not mine or yours,  
people will learn it with or without us...  
we can either accelerate or impede the progress.

In the spirit of sharing, I always try to remember that:  
*“No information is better than misinformation.”*

### Acknowledgments

When reading books, I always notice the acknowledgements.

However, until now I never realized the depth of their meaning...  
Vickie, Cole, Hank, Charlotte - you know what you have meant to  
this writing...I will be forever thankful.







*"You don't have to be a serious photographer  
to take your photography seriously."*

*Bob DiNatale*

*Onward!*

# Processing The Digital Image

## ***The 4-Phases***



*Introducing Bob DiNatale's*  
**PhotoCycle™**

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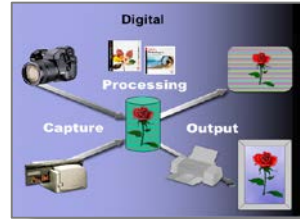
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# Introduction



*Every Optical System Has 3 Components: Capture, Process, Output*

Photography, film or digital, has many similarities. Photographic processing has been around for well-over 150 years. Although there are many differences between film and digital processing, there are areas that are common to both: controlling *highlights*; *shadows*; *contrast*; *dynamic range*; *etc.* We can benefit from our years of film processing when processing the digital image.



*In this book I will present my “4-Phases” of processing the digital image:*

## 1 - Convert



## 2 - Global



## 3 - Selective



## 4 - Expressive



*These phases are not software-specific but are sound steps following digital processing best practices.*

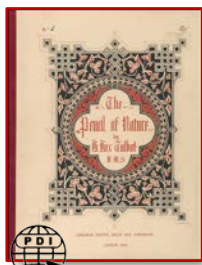
This book will allow you to establish a basis of understanding along with an importance of a consistent approach when processing your digital images.

With continuing improvements in digital processing software, the opportunity is available to digital photographer to achieve their “Artist’s Vision”.

As with any creative discipline, there are 2 components – *Craft & Creative*. The successful Digital Photographer needs to understand and control both. The first 3 phases of digital image processing: *Convert*; *Global*; *Selective* are craft oriented. The 4th phase, “Expressive” is creative - limited only by your creativity, awareness and “Artist’s Vision”. As your awareness and experience of the *craft* of processing grows, *creativity* in your photographs will also continue to grow.

## Photo History

Popular *digital photography* in the US is nearly 30 years old. It started with the introduction of Kodak DCS (Digital Camera System) 100, based on a Nikon F3 body released in May 1991. The images were 1.3 MP and stored on a monstrous 200 MB Digital Storage Unit (hard drive) that could store 156 images. It retailed at about \$28,000



However, digital photography is a babe when compared to silver-base film photography – *now closing in on its 200<sup>th</sup> years!* Fox Talbot's "The Pencil of Nature" was published in 6 installments between 1844 and 1846. It was the first commercially published book illustrated with photographs.

*"It was wholly executed by the new art of Photogenic Drawing, without any aid whatever from the artist's pencil!"*

## Digital Revolution #2

It has been more than 15 years since Tom Knoll, the father of Photoshop, developed Adobe Camera Raw [ACR] format in 2007. This started, what I see as, Digital Photography 2<sup>nd</sup> Revolution. Until then, most digital photos were processed in the camera. The scene's data was rasterized into dots/pixel then saved in industry standard .JPG format.

A simple explanation of raw is that the captured data is not processed. The scene's digital data, represented by *1s&0s*, is captured by the camera's sensor and *saved unprocessed* to the camera card. *This unprocessed data is saved to later be digitally processed by your software. (Click 3 photos above to link to more info)*

As Adobe's ACR software continually improved, other quality raw processing software started populating the digital processing market. Yet our raw data captured by the camera never changed – *still waiting to be processed – anew!* The exciting fact about camera raw is that software capability will continue to expand, and, we'll be able to re-process our raw data captured 15+ years ago with more options! In this example, notice the tonal detail in shadow & highlights; overall sharpness; rich color in the bouquet.



Processed 2005

Processed 2019

*My 4-Phases of Processing the Digital Image* takes full advantage of this powerful camera raw capabilities.

## **Mobile Photography**

Photography taken on Mobile Devices is the major source of picture-taking today. InfoTrends estimates there are 1.2 Trillion digital images a year! ...or 3.2 billion a day!! ...or 133.333 million an hour!!! – and I would venture a guess that 95% of them are shot on smart phones [\[Click Here\]](#)

Photographing with your Camera-Phone is sometimes referred to as “PHONtograph” or PHONEography. Call it what you will, there is no denying its impact on photography today and in the future. [\[Click Here for Camera Phone History\]](#)



Some *long-time photographers* look down at PHONographers. I have a photographer friend who feels frustrated looking at people’s Camera-Phone photos. “*They’ll say, ‘let me show you my cat’ and then spend minutes trying to find the photo... then when found, it is underexposed and out of focus – UGH!*”

Make no mistake, most PHONographers are visual people capturing exciting images. They are committed to their photos: they get down on one knee for a lower camera angle, stand on mailboxes for a higher camera angles; some have given their lives leaning a bit too far for that “great selfie” [\[Click Here\]](#)

With that said, I appeal to all PHONographers... if you’re serious about your photography then you must be serious about the presentation of your images...  
*...your images should be shown the best they can be!*

If you’re a PHONographer and you want people to spend time looking at your photographs, you owe it to the viewer to spend time and attentiveness when processing your images.

*“A photographer is known by what they show – not what they shoot”*

### **The Importance of Mobile Photography**

Many of the newer trends in digital photography are driven by these mobile devices: Camera-phones with Portrait mode to blur background with a choice of “bokeh”; multi-lens camera-phones saving “depth map” ... allowing for post-capture: focus; selective adjustments; magnification; etc. [\[Click Here\]](#)



[ Sidebar]: Compendium: Mobile Photography

For a more in-depth look at this important aspect of today’s digital photography, I have devoted an entire chapter in a compendium at the end of this book – [\[Click Here\]](#)



## **My Teaching Philosophy**

My philosophy of teaching is “adaption not adoption”. I am not looking for disciples, I am looking for fellow travelers... to share information and “*kick this can*”, this digital photography experience, down the road together.

I have 50 years of a diverse photography background: working in Polaroid’s research and development with experimental emulsions and sensitizing dyes, teaching the Nikon and Time Life school of photography, a US Patent in color printing, Adobe Certified in Photoshop Lightroom; *yada, yada*, a.k.a “etc.” ... and oh yeah, authored two books. ([see full bio here](#))

## **About My Books**

My first book discussed The Optimum Digital Exposure... this will discuss an approach to optimize the processing of your digital images.

In this book we will talk about capture as it relates to the *craft of photography*. We will not talk about “the decisive moment” or the *creativity of a photograph*.

Though creativity is, (*raison d'être*), *the reason-for-being*”, my personal thoughts on the creative aspects of photography are more appropriately discussed over a cup of coffee rather than some pronouncements put in the book.



## **Accompanying Web Site**

One thing we can say for sure, if the past has demonstrated anything, digital processing will expand, providing us with more capabilities! Better algorithms (*Computational Photography*); new processes (*Epsilon Photography*). This book has a complementary web site: [www.ProcessingTheDigitalImage.com](http://www.ProcessingTheDigitalImage.com) . It is not just supportive but integrated to follow this evolving medium.

### **Book Photo Examples and Links Are Posted on Website**

It is possible that subtle processing adjustments may be hard to notice in some book’s examples. All examples in this book are available to view on the book’s website.

There are informative interactive active links throughout the PDF version of book. This “globe” icon indicates active links. If the icon is attached to a photo inset, click on the photo to follow the link. If the icon is on a table of contents page, clicking the icon will direct you to the website showing all examples in the section.



If you have the printed copy of the book, the URLs to all book’s links are in the Appendix

### **Submit Photos**

You are invited to submit your photos using the *4 Phase Workflow* on the book’s website. You’ll find these photos under “Submitted Photos” menu.

If you would like to submit photos for the PDI website, please see the instructions in the Appendix of this book.

## **Final Word**

### **Book's Purpose and Intent:**

Two of the most critical events in photography are:

- 1) when we take the image in our camera... "the moment of capture", and
- 2) when we process that captured image.

As photographers, to express our "Artist's Vision", we need to understand both the *Craft* and *Creativity* of photography. There are many books exploring the creative aspects of photography...*it is the reason why we photograph!*

*In this book, I will talk about the photographic craft  
as it relates to "Processing the Digital Image".*

*And only attempt to show where in the process creativity is best applied*

### **Choosing Your Software**

- Even if you saved your digital photos in .jpg format, you can still benefit from the non-destructive processing supported in my 4-Phases PhotoCycle™
- Although my process is not-software-specific, the examples used in this book are with Adobe Lightroom and Photoshop.
- Choosing a digital processing software is personal – there are many full-featured powerful software available. My take on software, use what your friends and colleagues use... there'll be lots of questions and you can share knowledge with them.

Whichever software you chose, commit to learning its full power....

***"Know your software, it will be the fastest way to get to your "Artistic Vision"***

### **Post Visualization vs. Pre-Visualization**

I feel one of the most significant difference between *film* and *digital* photography is *Pre-Visualization* versus *Post Visualization*.

With film photography there was a lot of talk, *and needed talk*, of *Pre-Visualization* – this was due to the limitations of the film process. With digital photography, because of the power and continued advancement in processing software, the availability of *Post-Visualization* has become a powerful tool to help achieve our "Artistic Expression".

# Part 1

## Photographic Fundamentals



"Both the grand and the intimate aspects of nature  
can be revealed in *the expressive photograph*."

Ansel Adams

|

# Essential Concepts



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**Moment of Capture & Artist's Vision**

I first want to talk about the *Moment of Capture* and the Artist's Vision. As photographers, our hope is to have our observations turn into *expressive photographs*. Whether exposing analog film or capturing digital image - the nature of light, and therefore photography, poses some unique challenges.

After the *Moment of Capture*, we process our image with the intent of expressing our "Artist's Vision". Because of the limitation of the photosensitive material, be it film or a digital sensor, fitting the tonal range of a scene on to film or digital sensor certainly needs a good understanding or your craft.

However, I can say with surety...

**...optimum digital exposure is the first step to optimum digital processing.**

An interesting aside,

When photographing with film, "*we take a picture*"

When photographing in digital, *we capture an image*".

...these 2 different approaches say a lot about the uniqueness of each media.

In either case, from the time we open the camera's shutter- *the moment of capture* [MOC] - to the time we show our photograph, the "*Artist's Vision*" is where the photographic processing takes place. To the next page you will see photographic pairs of: *the Moment of Capture* and the final "*Artist's Vision*".

Curves of 2 Shapes

With film processing - there were limitations. The analog curve could be *bent, raised, shaped* but it was always an analog curve with increasing scene brightness following a linear path from shadows (S) to Highlights (H).

**FILM  
S-CURVE**



With digital processing – there is no such limitation - just your

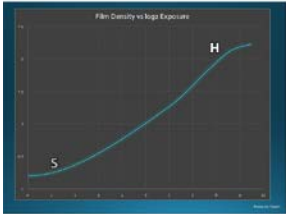
**DIGITAL  
S-CURVE!**



imagination and understanding your craft. The digital photograph is captured, and the scene's data saved in a file. Unlike analog film, the digital processing "curve" does not need to, and more likely will never, follow a linear path.

Processing the digital image is sometimes done for image enhancement, other times it is done out of necessity. This book will discuss the unique advantages of the digital processing tools to enhance our images.

Analog S-curve



Digital "S-curve"



[Moment of Capture & Artist's Vision]

"Moment of Capture"



"Artist Vision"

"Moment of Capture"



"Artist Vision"

"Moment of Capture"



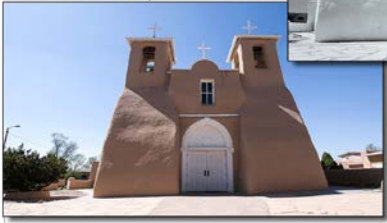
"Artist Vision"



"Artist Vision"



"Moment of Capture"





### Tonal Relationship - The Photographic Challenge

The challenges of processing the digital image have to do with not only a good understanding of the *craft* but its importance of placing the scene's dynamic range of tones on the camera's sensor. *(see examples on the opposite page)*

- a. Photographing under harsh light will cause strong contrast – washed-out highlights and dark shadows;
- b. Placing your subject in front of a bright sky will cause the person to be silhouetted - underexposed;
- c. Photographing your grandchild by a train window will drive the exposure darker. *Both these last two examples fool the camera's light meter – what photographers call “subject failure”;*
- d. Capturing early-morning kitchen-light will create hard shadows and various pockets of challenging tonal relationships.
- e. Conversely, on a gray overcast or hazy day, the scene will appear “flat” (lack of contrast) and probably have a blue cast with very little tonal separation. With such a “flat” scene, the digital processor has a wide extreme of choices: to brighten; darken or expand the tonal relationship.

It is because of all these vagaries of capturing light for a digital exposure that there *is a need for processing* your captured images.

***Tonal relationships ARE the reason for Ansel Adams' Zone System.*** It was not an exercise in mental-photographic gymnastics but intended to better balance the tonal challenges of a scene. Adams did this by calculating a unique exposure for each scene, then, *developing that negative specifically for that scene.*

Even with his careful exposure and complementing development for each scene, there was still need for balancing tonal relationships. This “balancing” took place in the photographic darkroom during printing, called “dodging and burning”.

Ansel Adams has a great quote that also applies to digital photography:

*“Dodging and burning are steps to take care of mistakes  
God made in establishing tonal relationships.”*

The Photographic Challenge

*"...mistakes God made in establishing a tonal relationship" – Ansel Adams!*

Image Capture

Final Process

a.



b.



c.



d.



e.





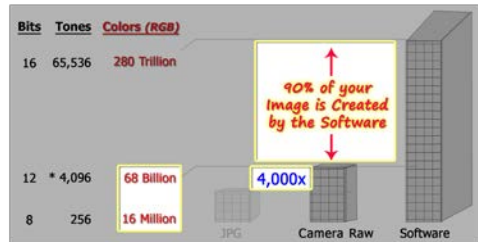
## How & What Do We Capture?

Today's digital cameras allow us to capture our data into different formats: *a processed JPEG*, a rasterized pixelized representation of the scene; or *a camera-raw file*. The camera raw file format is technically not an image but *1s&0s* that represents the scene's brightness that was captured. Raw captured files provide significant advantages over the JPG file format.

As I mentioned earlier, the *1s&0s* of the raw data never changes! The first raw files captured in 2003 are now able to be processed years later with software algorithms far beyond anything that existed in 2003... And, as software expands its processing capabilities, these 2003 raw captures will be able to be processed 20 years from now with software having far greater capability than were using today!

If we look at the current state of digital cameras, most capture in 12-bit format... That is  $2^{12}$  or 4,096 shades. The JPEG file is an 8-bit file  $2^8$  or 256 shades. Its format limits the amount of colors captured... about 98% of them!.

The total # of shades are for each color channel [Red/Green/Blue]. So, to get the total # of colors in a JPG file, we need to multiply  $256 \times 256 \times 256$  or a total of 16,000,000 (16 million) colors. To get the total # of color in a 12bit raw file, we need to multiply  $4096 \times 4096 \times 4096$  or 68,000,000,000 (68 Billion) colors. **That is 4,000X more shades captured in the raw file when compared to a JPEG file.** This should be enough to understand the importance of shooting camera raw format.



Besides the obvious advantage of 4,000x more color data, Raw capture:

1. also provides us non-destructive processing working with the original unprocessed data.
2. the originally captured *1s&0s* of raw data never changes!
3. we can reprocess the original camera raw capture years in the future as digital processing software capability keeps expanding

### [Sidebar]: Capture

Today's digital cameras have not evolved much in the last 5 years, however, in that same time, processing software, with new sophisticated algorithms and artificial intelligence, has grown significantly

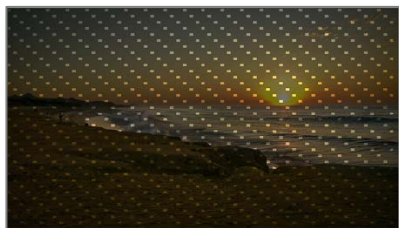
## You Say What? What Did You Say?

***Are you sitting down? Are you ready for a head-scratcher?***

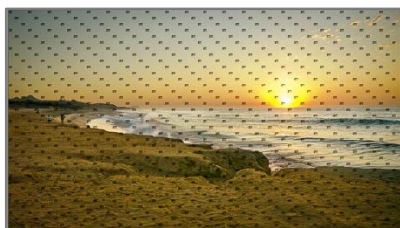
**10% of your digital image is captured by your camera...**

**The other 90% of your digital image is created by your processing software!**

And that's assuming an optimum exposure which, in my teachings,  
is done maybe 2% of the time - mostly by accident.



10% of your digital image  
is captured by your camera



90% of your digital image  
is created by your software

## "Get It Right in the Camera"

I think one of the most misunderstood concepts when photographing is the term, "*Get It Right in the Camera*". I think it is misunderstood because, what are we trying "*to get right*" ...

*the gesture, the perspective, the decisive moment...*

*these are what make a photograph.*

***I can tell you what you don't want...the FINAL exposure!***

The **optimum exposure** is done in the camera...

...the **final exposure** is done in the processing.

Capturing the **optimum exposure\*** - is the **Craft** of the photographer.

Capturing the **"decisive moment"** - is the **Creativity** of the photographer.

\*Optimum exposure varies depending on the light-sensitive material that is exposed: B&W negatives; color negatives; color slide film (chrome); digital capture – they all have different "Optimum" exposures. I urge you to read my 1st book The Optimum Digital Exposure.

The Photographer's Mantra:

*Optimum Exposure is the first step in Optimum Processing*

[ Sidebar]: The Difference Between JPEG vs. Camera Raw

I say, it is the difference between "cream" and "milk" ...cream is thicker and has more "butter-fat" (data) when poured. For those satisfied with that explanation, please shoot Camera Raw.

For those who need a little more convincing, let me quote Bruce Fraser (Real World Camera Raw): "...when you shoot JPEG, you're trusting the camera's built-in raw converter to throw away a large amount of the captured data... about a stop of usable dynamic range, and you have essentially no control over what gets discarded.

That satisfied me...If you still need coaxing, read Bruce Fraser's 3-page definitive holy grail "Understanding Digital Raw Capture". (see appendix)



Optimum Exposure

## Who Needs Digital Processing and How Much?

“Isn’t digital processing just for photo enthusiast, the ones with that very expensive and heavy cameras?” “Nope”, it’s for everybody - from the pro to the point-and-shoot camera to Camera-Phones.

Whether you are aware of it or not, digital processing takes place on every image shot, whether shooting with a *heavy* DSLR, a point-and-shoots or a Camera-Phone. Digital processing is done on every digital image that is shot... yes, that’s right every one of the 3.2 billion photo per day! (see PHONtography next page)



### The Future (Digital Photography)

With *artificial intelligence* and *machine learning* assisting the advancements of digital processing software, there are many aspects of digital processing that can be automated. However, no matter the advancements, it’s hard to see the replacement for when *the photographer’s decision to trip the camera’s shutter or makes expressive software edits*.



Pondering the future advancements in digital photography, it became apparent to me that the start of the *creative process* – [*moment of capture*] and the end of the *creative process* – [*Artistic Expression*] are both the domain of the Photographer/Processor – that would be YOU!

## HOW MUCH TIME TO SPEND PROCESSING?



**Proportionate to the amount of time you want someone to look at your photos!**









*"...she liberates herself from the technical part, then...  
she can have the freedom of expression"*

*...said of Broadway performer Chita Rivera  
by Graciela Daniele*

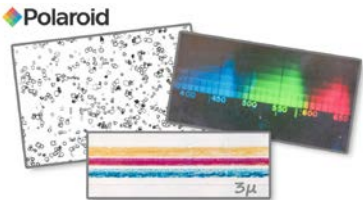


**Freedom from Process**

For creative people, the thought of following a procedure can have a chilling effect. The *free-form nature* of art has long been held sacred – and necessary to the creative process. However, ask any artist and they will tell you that practicing their craft was the key that gave them *freedom to express*.

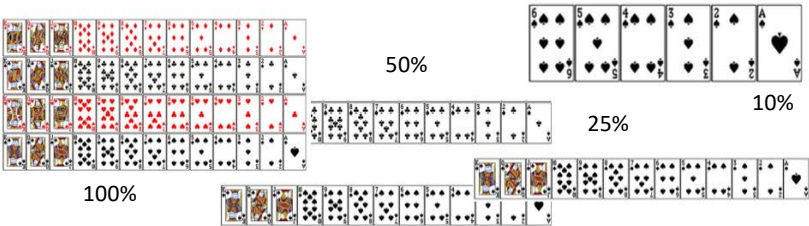
There is a wonderful quote by Graciela Danielele, a Broadway choreographer who worked with the magically talented Chita Rivera. She said of Chita, *“she liberates herself from the technical part, then... She can have the freedom of expression.”*

Working in the analytical lab at Polaroid’s Research and Development, we were taught a scientific method to quickly achieve results and trends. We either doubled or halved the previously tested value. It was the quickest way to come with the confident and trusted results.



Pick-a-Card

I’m a father of two boys. When they were young, I would always play the “pick a card, any card” game. They would pick a card and I would then try to impress them with *my magical powers* by guessing their card. *“Is it red?”* With their response of *“no”* I just ruled out 50% of the cards. I would then ask, *“is it a club?”* With another response of *“no”*, I just ruled out 50% of the 50% choices... *2 incorrect answers ruled out 75% of the possibilities*. My boys were impressed, *“you’re getting really close dad”*. I then asked, *“was it higher or lower than the 7?”* ...well, you get the point. With 2 wrong answers and a qualifying question I ended up with 6 options - *I ruled out about 90% of the 52 cards!*



So, what is the *creative* part here – the freedom from process? Process leads to discovery. If you try this with several decks of card, what seems a mundane repetitive task, you may think nothing would be different – or, you just may notice that although all decks have 52 cards – *but wow, those Aces of spade of each deck are very different.*



## The Creative Process Funnel / Drilling Down

When processing the digital image, I find the *Freedom of Process* - this “funneling” / “narrowing” / “paring-down”, helps me in a similar way. Using a constant 4-phases workflow helps me achieve find my artistic expression.

We are about to explore the PhtotoCycle™ - the digital processing workflow. We'll look at each of the 4-Phases of processing the digital image refining our image with each subsequent phase:

- The 1<sup>st</sup> Phase - *Convert*, changes the camera's *digits (1s&0s)* to *dots (pixels)*. Although there is a lot of processing being done during converting, there is little involvement from the photographer - especially after setting some camera development defaults for each your camera. (*I will explain more in Phase-1*)
- The 2<sup>nd</sup> Phase - *Global*, adjustments needed to generally correct the entire image - stopping when we get the image “most-correct”.
- The 3<sup>rd</sup> Phase - *Selective*, addresses those local areas that couldn't be adjusted satisfactorily with the global adjustment - such as: blocked shadows, washed out highlights, lack of detail in my granddaughter's dress, needing a little “punch” in the clouds and a “bluer” sky (*a deeper awareness image's tonal relationships*)
- The 4<sup>th</sup> Phase - *Expressive*, where we *make* that expressive photo. Can't really tell you what gets done here – sometimes it surprises me. I make adjustment I was not aware of when shooting, or when I selected the photo to process when reviewing my shoot – true *Post-Visualization*!

Here is where we find the time spent with our image in the first 3 phases allows us to better express our “Artist's Vision”.

*Please don't underestimate the power of process – it can be very liberating!*







*"Photography is not about the thing photographed.  
It is about how that thing looks photographed."*

*Garry Winogrand*



# Software Considerations



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## The Big Picture: **Software Considerations**

Before we get to discussing each of the 4-phases in detail, I need to discuss the big picture - considerations of features needed in your digital processing software. I will explain many of these features more in the *4-Phases of Digital Image Processing* section of this book. For now, here is an overview of some considerations

Some of the specific features you want in your software:

- the ability to do both *global* and *selective* adjustments – *(this is in most every software)*
- the ability to do *pixel replacement*. There will be part of your picture, both *necessary* and *creatively*, where you will want to remove or add pixels.
- the ability to save camera-specific *default develop settings*. Not all software will support this feature, but this ensures the most mundane, but important, aspect when converting those digits to dots.
- the ability to be able to process *non-destructively* – this is called Parametric Image Editing [P.I.E.] Adjustments do not change pixels but are parametric/mathematical adjustments that get applied to the file's 1s & 0s. These changes get “baked” into the photo when output. *(the key term used mostly is “Smart Objects”)*
- the ability to support *One Master File* with many “children”. These iterations *(sometime called virtual copies)* can have different processing but any changes to the *Master File* “ripples” through the *children*.



### **“4 PHASES” SOFTWARE CONSIDERATIONS**

There are many software other than Adobe Lightroom\* & Photoshop\* that people are using successfully and creatively. My take on the software: - “**know your software**” Become aware of its tools and their extensive range of uses... *You will get to your “Artistic Expression” faster... And, more Expressively!* However, it's important to know that:

***4-Phases of Processing the Digital Image is not software specific!***

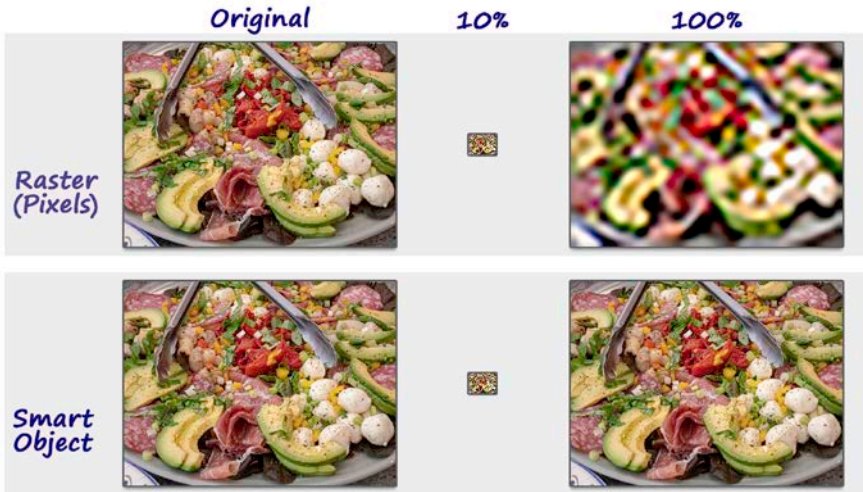
#### [Book Examples]

Most examples used in the book are from Adobe Lightroom and Photoshop software. I started using Photoshop in 1992 version 2.5 and LR from the beta version April 2007... hard to turn back now.



**The Big Picture: Working with Smart Objects & P.I.E.**

In this example, I resized two files – a pixel-based file and a “Smart Object” file. I downsized both files 10%. I then resized the 10% reduction back to the 100%. The results are obvious.



The pixel file, when reduced, discarded 90% of the data. When resized, it had to create 10x more pixels than it had – the results are unusable!

The “Smart Object” file applies *Parametric* calculations to the original data. When resized, it just applied another parameter to the original data... no destruction of the imaged occurred because the original data never changed.

“Smart Objects” can be resized, rotated, etc. many times Non-Destructively! Parametric adjustments to the file are reflected when the image is displayed but only get applied (rasterized) when the file is output.

Try to maintain Parametric Image Editing [P.I.E.] throughout the digital process – or as long as possible. The original raw data in a “Smart Object” goes as far back as when it was initially captured in the camera.

Remember, digital software will continue to evolve. When it does, we can apply those additional software capabilities to the original raw data we captured years ago!

### The Big Picture: The Photoshop Handshake

If you have the Adobe Photographer's subscription and use both Lightroom and Photoshop, there are definite advantages opening your files in Photoshop (PS) from Lightroom (LR). The main reason is, *this workflow will keep track of your edits* - opening a file from LR to PS, LR will keep your PS changes. Upon saving your PS work, LR will update and place your PS file into LR. LR will also place/stack the PS file beside the original file you open. *No lost files! No "extra" original" PS files...* a great tool for supporting the "One Master" workflow.

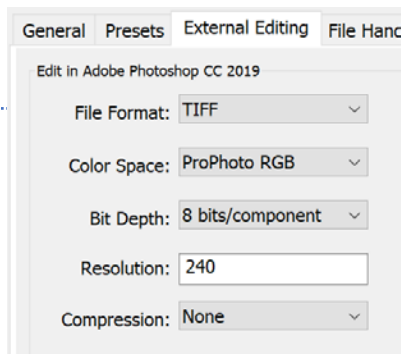
There are two considerations when you open a file from LR to PS.

1. Setting preference as to the formatting of the PS when opened
2. how you will open the file(s) in PS.

### Setting PS File Preferences in LR

In the LR "Preferences" under the "External Editing" tab you will choose the *File Format; Color Space; Bit Depth Resolution and Compression*. You can see my choices in the inset – *(here we are just talking about our options - there will be more discussion later in this book)*

- **TIF or PSD** (Photo Shop Document) -your choice – I choose TIF because I started using TIFF before PSD was created – it's a habit!
- **ProPhoto**: because it is the largest color space available to us... and we want to process in the largest color space – right
- **8 bit/16 bit**: – your choice –16 bits create file size 2x as large and, if I keep my data in Raw [P.I.E], I can make that 8/16-bit choice later
- **Resolution 240** (PPI)... you can set what you want here – some feel more comfortable to set it to 300. It doesn't affect file resolution, just document sized based online resolution of the file.
- **Compression: "None"** because it saves files faster and storage on drives are cheap –our time isn't.

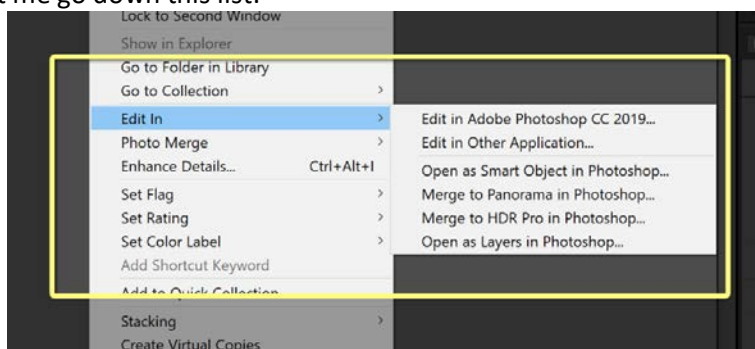


Enough for now, let's talk about our option when opening files in Photoshop with these preferences.

### Option When Opening File from LR into and External Editor

Your options are to: “Edit in...” PS; *Other Apps*; *Open as Smart Objects*; *Merge to Panorama in PS*; *Merge to HDR in PS*; *Open as Layers...* oh, *really now*. What are all these choices, I just want to get working to make PS edits.

Let me go down this list:



- “Edit in...” **Photoshop** - the standard *but*, you *could* have choices...
  - If you are opening a .jpg (ugh) or Raw file, LR will open the file directly into PS and *raster it into pixels... we just entered the world of destructive editing Ugh!/Ugh!*
  - If, however you are opening an edited (TIF or PSD) file, you’ll be prompted to choose from 3 choices
    - *Edit Original; Edit a Copy; Edit a Copy with LR Adjustment...* you can read the descriptions, but you will use *Edit Original* most often. Why? When you opened your raw file from LR to PS to edit, it was saved as a TIF or PSD (depending on the preferences you chose earlier). When you are working on an edited (TIF/PSD) that was saved – you’ll want to reopen the file to continue to work on it



**Other Apps:** You can set-up a second External Editor in your preferences

**Open as Smart Objects:** you should be using this most of the time for reasons discussed earlier in *The Big Picture: Working with Smart Objects & P.I.E.*

**Merge to Panorama or HDR Pro in Photoshop (Don’t):** LR’s Merge is better

**Open as Layers:** very powerful for creating collage and animation in Photoshop

**The Big Picture: Working with One Master File**

In this example, there are two iterations (“children”) of the “Master” file. Changes to the “Master” (parent) file are reflected in its “children” files.

**Master****Children****Which One Do You Like!**

Here is a wonderfully bright and colorful Floridian scene. In Photoshop, I cleaned up some scratches on the “Jag” and removes some wires and yellow lines on the pavement. When I gave the photo to my brother, he showed me a B&W Polaroid he had of the car taken when new in 1965. It got me thinking about making a black & white iteration of the photo... *the middle image*.

Then I wondered, what would it look like with an infra-red iteration on his red-Jag? Both B&W iterations were really good... matter of fact, all 3 – the master and 2 iteration worked for me.

By way of demonstrating the power of having *One Master* file with “children” (virtual copies), I created the example above. Notice the 2<sup>nd</sup> row. I removed the 4th (rightmost) window on the *Master File*... the change was reflected in the two “children” files.


**More Than Just Cool!**

Ever remove a “zit” from someone’s face? Or an exiled brother-in-law from a wedding photo? ... only to have it show up in a photo at a reunion 10 years later *because... you printed the wrong file!*

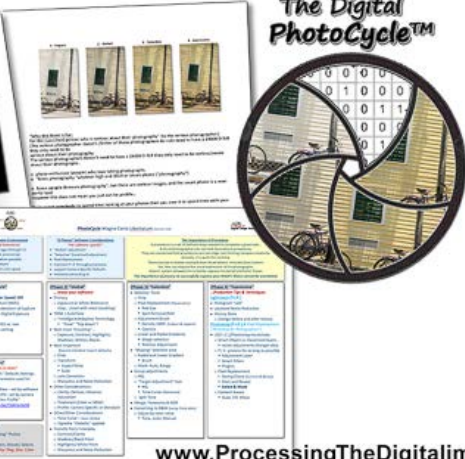
Or created separate files for different print sizes... and then sent the 5x7 file to be printed on a 16 x20 print. Yeah, me too – the print was soft AND the face had a “zit” and my brother in law was in the picture. *Saving several iterations in different files is so “early millennium!*



# The PhotoCycle™



Processing the Digital Image  
The 4 PHASES  
Bob DeNardis



The Digital PhotoCycle™

www.ProcessingTheDigitalImage.com



# The PhotoCycle™

When I started writing this book, my main intent was, of course, to discuss the 4 Phases of Digital Image Processing. They were very easy to identify:



**Phase 1-Convert:** changing captured digits to software dots – a photo

**Phase 2-Global:** multiple global scene adjustments that effect every part of the captured data

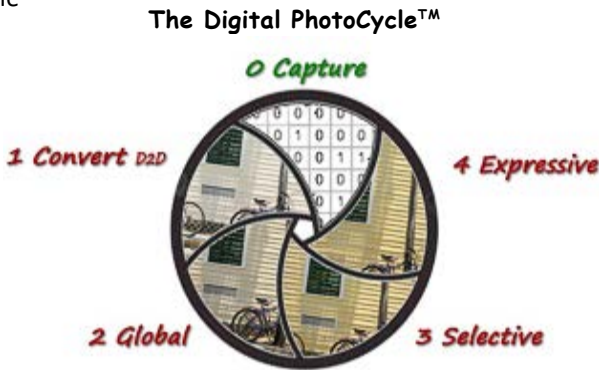
**Phase 3-Selective** : adjustments to selective areas of the image capture data

**Phase 4- Expressive:** adjustments made to make the expressive photograph

## But Wait, There's More...

It became apparent to me very soon that processing the digital image cannot occur until you “take a picture” or “capture an image”.

There needed to be a step before the 4 phases of processing - *capturing the image*. The diagram to the right represents the PhotoCycle™ showing the 4 phases of digital processing plus a Phase 0-Capture.



## **The PhotoCycle™.PDF**

I created a one-page PDF document that details the *current steps* for each phase of the PhotoCycle™. This PDF is purposely not protected so you can make your personal notes within the document.

Along with each detailed panel of the 4 Phases, there are several other panels *with other considerations* when processing the digital image.

Note:

*This PhotoCycle™ document is a detailed workflow to processing the digital image.*

The next two pages have the full document.

Here is the link to download the PDF from the book's website:

[Click Here to Download the PhotoCycle™](#)

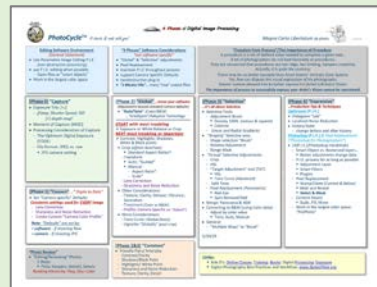
[Sidebar]

There is no doubt that in the future new features of digital processing software will emerge.

The PhotoCycle™ is a living/breathing document – I will continually update and repost those changes to the website.

In the top-right of the page is the date it was last updated (*e.g.* 6.13.19).

Please keep checking with the book's website to stay current.







**PhotoCycle™** *It starts & ends with you!*

**Editing Software Environment**  
***(General Statement)***

- Use Parametric Image Editing P.I.E. (*non-destructive processing*)
- use P.I.E. editing when possible.
  - Open files as “smart objects”
- Work in the largest color space

*...know your software!*

**“4 Phases” Software Considerations**  
***“not software specific”***

- “Global” & “Selective” adjustments
- Pixel Replacement
- maintain P.I.E. throughout process
- support Camera Specific Defaults
- nondestructive plug-in
- “1 Master File” ... many “tmp” output files

**[Phase 0] “Capture”**

- Exposure Trio: [+1]
  - *f/stop; Shutter Speed; ISO*
  - [+] depth map<sup>1</sup>
- Moment of Capture [MOC]
- Processing Consideration of Capture
  - The Optimum Digital Exposure (TODE)
  - File format: JPEG vs. raw
    - JPG camera setting

**[Phase 1] “Convert” ... “Digits to Dots”**

- Set “Camera-specific” Defaults
- Constants settings used for EVERY image***
  - Lens Correction
  - Sharpness and Noise Reduction
  - Create Custom “Camera Color Profile”

**Note: “Defaults” are set by:**

- > **software** - if shooting Raw
- > **camera** - if shooting JPG

**[Phase 2] “Global”**

*(Adjustments beyond standard Camera defaults)*

- “AutoTone” (Color/B&W)
  - ... “Intelligent”/Adaptive Technology

**START with most troubling**

- Exposure or White Balance or Crop\*  
*\*(effects AutoTone)*

**NEXT most troubling or important**

- Contrast; Highlights; Shadows; White & Black points
- Other “Basic” Considerations:
  - Texture; Clarity; Dehaze
  - Vibrance; Saturation
- More Considerations:
  - Tone Curve –Global (*basic*)
  - **Sharpness and Noise Reduction**
    - Texture; Clarity; Detail interplay
  - **Lens Correction**
  - Transform
    - Auto; “Guided”
    - Manual:
      - Aspect Ratio; Scale
  - Vignette “Globally” (*post crop*)
  - Profile: Camera Specific (*or “Default”*)
  - Crop Aspect Ratios: Standard? Other?
  - Treatment (Color or B&W)

**“Photo Review”**

- “Editing/Reviewing” Photos
    - 3 Steps:
      - Picks; Keepers; (*break*); Selects
- Ranking Hierarchy: Flag; Star; Color***

**[Phase 2&3] “Friendly Pairs”**

- Interplay
  - Contrast/Clarity (Texture)
  - Shadows/Black Point
  - Highlights/ White Point
  - Sharpness and Noise Reduction
- Frequency: Texture; Clarity; Dehaze; Sharpening



## 4 Phases of Digital Image Processing



8.7.2019

### **"Freedom from Process"/The Importance of Procedure**

A procedure is a set of defined steps needed to complete a given task...

A lot of photographers do not look favorably at procedures.

They are concerned that procedures are too rigid, too limiting, hampers creativity.

*Actually, it is quite the contrary.*

There may be no better example than Ansel Adams' intricate Zone System.

Yet, few can dispute the visual expression of his photographs.

Adams' system allowed him to better express his (Artist's/Artistic) Vision.

*The importance of process to successfully express your Artist's Vision cannot be overstated.*

#### **[Phase 3] "Selective"**

**...It's all about Selection**

- Selective Tools
  - Adjustment Brush
    - Density 100% (*reduce & repaint*)
    - Colorize
  - Linear and Radial Gradients
- "Shaping" Selective area
  - Shape selection "Brush"
  - Relative Adjustment
  - Range Mask
- "Group" Selective Adjustments
  - Crop
  - HSL
  - "Target Adjustment" tool [TAT]
    - HSL (B&W)
    - Tone Curve (*Advanced*)
  - Pixel Replacement (*Parametric*)
    - Red-Eye
    - Spot Removal/Add
- Merge: Panorama & HDR
- Converting to B&W (*using Color data*)
  - Adjust by color value
    - Tone, Auto, Manual
- General:
  - "Multiple Ways" to "Reset"

#### **[Phase 4] "Expressive"**

**...Production Tips & Techniques**

- Lightroom [P.I.E.]**
  - Histogram "Lab"
  - Localized Noise Reduction
  - History State
    - change before and after history
- Photoshop [P.I.E.]**

*... "Photoshop for Photographers"*

  - LR /PS Handshake (P.I.E.)
  - Layers:
    - Smart Objects (P.I.E.) vs. Pixel
    - \*P.I.E. does not change original data*
    - ...maintain as long as possible*
    - \*Adjustments to Pixels changes data*
    - Smart Filters & Plugins
    - Layer Masks (*Selection*)
    - Adjustment Layers
  - Pixel Replacement
    - Stamp/Clone (*Current & Below*)
    - Copy/Matt/Reveal
  - Selection
  - Content Aware
    - Scale, Fill, Move

*\* Work in the largest color space: "ProPhoto"*

#### **Links:**

- Bob D's: [Online Classes](#); [Training](#); Books on Digital [Processing](#); [Optimum Exposure](#); [All](#)
- Digital Photography Best Practices and Workflow: [www.dpbestflow.org](http://www.dpbestflow.org)

- Purple Text indicates "Default Develop Setting"

## Part 2

### The 4-Phases



*"...simplicity is the goal in every art,  
...achieving simplicity is one of the hardest things to do."*

*Pete Turner*

# Digital Image Processing

## The 4 - Phases



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## The 4 Phases: **Processing the Digital Image**

1 - Convert



2 - Global



3 - Selective



4 - Expressive



This chapter will illustrate the 4-Phases of Processing the Digital Image. There will be many examples demonstrating processing techniques. It is possible that some of the subtle adjustments may be hard to distinguish in book form.

Remember the book's complementary web site where examples from the book will be available to view: [www.ProcessingtheDigitalImage.com](http://www.ProcessingtheDigitalImage.com)...

*...from the main menu select "Book Photos" then select the section where the examples you want to view reside.*

### How To Use The "Globe" Icon

- clicking the "globe" icon on the *Title Page of each Phase*
  - will direct you to the website showing all examples in that Phase
- In the Photoshop for Photographers' section,
  - clicking the "globe" icon associated to a specific example ...
  - will take you to *that specific example* on the website

### "Submitted Photos"

You'll find photos submitted by readers under "Submitted Photos". Again, you are invited to send your photos processed using the *4-Phases Workflow*.

Please share your thoughts and questions at the bottom of this webpage.



**Let's begin to explore the *4-Phases of Processing the Digital Image*.**



*"The heart and mind are the true lens of the camera."*

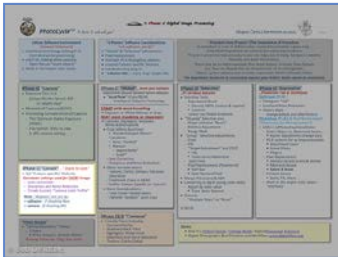
*Yousuf Karsh*



## The 4 Phases



# Phase 1... Convert



### [Phase 1] "Convert" ... "Digits to Dots"

- Set "Camera-specific" Defaults  
**Constants settings used for EVERY image**
  - Lens Correction
  - Sharpness and Noise Reduction
  - Create Custom "Camera Color Profile"

Note: "Defaults" are set by:

- > **software** - if shooting Raw
- > **camera** - if shooting JPG

### PhotoCycle™

#### Phase 1 Convert

*This Phase 1 we convert digits to dots... The cameras 1's & 0's converted to more 1's & 0's in the software to create our image.*



## **Phase 1: Convert**

*Here, the software converts the camera's digits to dots (D2D) to form a picture. "Hey, but I don't Process my images – I just take photos with my point-and-shoot camera or my Camera-Phone."*

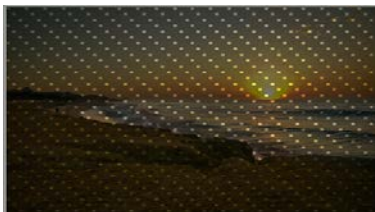
Now for those of you who don't think you process your photos, *because you don't use a computer*, make no mistake – processing occurs - and plenty of it! This processing occurs in your camera or Camera-Phone. How your image is processed is determined by the camera manufacture's *default develop settings*. You may be aware of some settings – *exposure, contrast, white balance*, and maybe not aware of others: *color saturation, sharpening, noise reduction; lens correction; chromatic aberration removal, etc.* I'm sure there are many more that I am not aware of.



*These processing adjustments are applied to each image, and if not specified, are saved in an industry standard JPEG file format.*

What looks very innocent and seems straightforward – *pointing your camera at a scene and immediately seeing the scene displayed as a picture on the back of your camera* – is surprisingly complex. Minor changes in voltage on your camera's photosensor, representing scene's brightness from shadows to highlights, are used to create a photo. These miniscule changes of voltage need significant processing *to make an acceptable image*.

Remember my statement earlier that *90% of your image is created by the software!* Let's take a closer look at this convert phase.



### **[Camera Preview]**

The preview that you see on the back of your camera's viewfinder is processed with the manufacturer's defaults settings. What you are seeing is a JPG representation of the *1s&Os* captured. For those of you who religiously live by the "Blinkys" on the back of your camera to evaluate exposure, you should know, especially if you shoot raw, the image displayed is limited and pretty useless. The purpose of peeking at the camera preview (called "chimping") is to check composition and see if your grandchild is smiling.

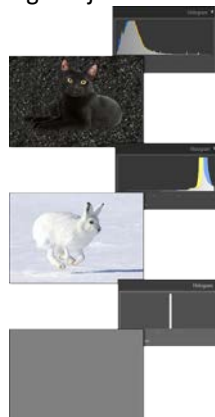
## A Word About Histograms

The histogram is often misunderstood. Some think the histogram defines what the image should look like... quite the contrary. The histogram just represents the dispersion of brightness in the file.

A histogram of a black cat would have many of the pixels to the left side.

Although quite different, a proper representative histogram of a white rabbit would be to have many of the pixels on the right side of the histogram.

When you photograph a gray card, your histogram will have a very thin line in the middle! Why? Because the dispersion of 100% of the pixels have same mid-brightness.



## Software Develop Defaults

Beyond the necessary conversion of these small voltage changes on the camera's sensor, there are many additional settings you can apply to every photo... your default develop settings.

Many software programs allow you to set the *Default Develop Settings*. "What processing settings should you set?" The answer, *"the settings that are applied to every image capture brought into your software!"*

Many software programs allow these settings to include the *specific camera profile of the captured the image!*

Let me state this another way, if you had 3 cameras and one camera card, you could use that one card in all 3 cameras. Providing the software had *camera-specific profile* set in develop defaults for each camera, the software would recognize which camera took the photo and apply the correct camera defaults!

You might say, *"If I set the same default to all my camera, what does it matter?"* If your default settings include a *camera-specific color profile\**, then two wedding photographers could shoot the same wedding and the maid of honor's teal dress would be the same color when processed in your software.



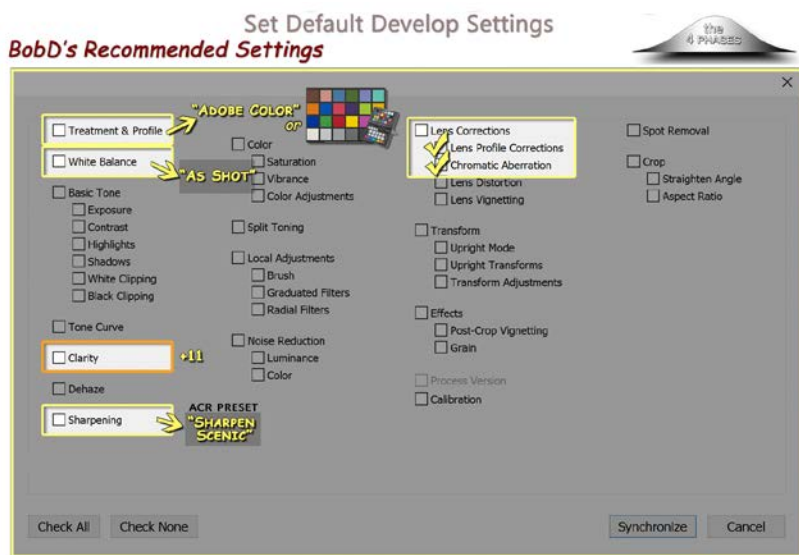
(See next page for more detail)

## What Default Develop Settings Do We Need for Every Photo?

You need to give some thought as to what settings you would want for *every image capture*.

Every scene is unique – its own exposure, contrast, brightness, dynamic range, etc... Therefore, *each scene needs its own specific basics adjustments*, so, ***you do NOT want any basic scene adjustments in your default.***

What settings are common to all exposures? Here are my suggestions  
**Default Develop Settings:**



**Note:** This screen is Adobe Lightroom's "Create Preset" screen. I am using it to show all possible choices when setting your "Develop Defaults". (See Appendix D)

### About the "Treatment & Profile" Area... this is very powerful

- If you select nothing, the software will use the manufacture's color default.
- If you select something, they expect to you to add a profile such as:
  - emulating a camera manufacturer's profile: e.g. "Camera Faithful", or
  - an Adobe creative profile such as "B&W 01" or "Artistic 07"

Other than the manufacture's default, these profiles would not be applied to every image capture and therefore would not be used as a default.

However, this is where it gets powerful. The software can add a custom profile, such as a "Camera Calibration" specific to your camera(s) and apply it to every image captured by that camera!

I strongly suggest you calibrate your camera(s) and include this "Camera Calibration" to your Default Develop Settings.

*...Let's talk more about creating and using a camera calibration profile*

## Creating and Using a Camera Calibration Profile

*A camera-calibration profile defines the “personality” of your camera sensor... its color bias, contrast, dynamic Range, etc.*

If you are interested in color fidelity – this step is a must for you. Create a specific color profile for each camera you have. An easy way to do this is using an X-Rite ColorChecker.

Simply photograph the ColorChecker and then open the file with the provided software. The software knows the colors of the ColorChecker and compares them to the colors produced by your camera. It creates a custom *camera calibration profile*, a Lookup Table, removing the bias of your camera’s sensor.



(Xrite ColorChecker Passport)

### Add Your Specific “Camera Calibration” To Your Develop Defaults

While processing an image, reset all default settings to your image. Now, in the “Profile” area, select your newly created “camera calibration”. Now re-save your Default Develop Settings. When importing files into your software, this Camera Calibration, along with all your other Default Develop Settings are applied when converting digits to dots.

### There Is More?...

The camera’s sensor responds differently under varied lighting conditions – outdoor vs. indoor. The X-Rite Passport software mentioned above can create a *dual-illuminant* camera-specific profile. To create this *dual-illuminant profile*, shoot the ColorChecker target twice, once in daylight and once indoors. Using their software, select the 2 exposure and it will create *one profile* with *two illuminant* lookup tables: *Daylight & Tungsten*.

When you convert digits to dots, your processing software will use the dual lookup tables and mix the appropriate illuminant throughout a wide range of color temperatures for the various lighting conditions specific to that scene.

### Applied Develop Settings

Did I say before how smart these digital processing software are? They not only recognize the camera body that the photo was captured with, *they can also detect the lens used during capture!*

Some processing software manufacturers provide lookup tables (LUTs) for the most popular lenses. These lens profiles have corrections for lens vignetting, distortion and chromatic aberrations!

And yes, provided you checked the lens correction box when creating your Default Develop Settings, these lens corrections will be applied when importing files into your software... *look Ma, no hands!*

#### Default Develop Setting Lens Profile Correction

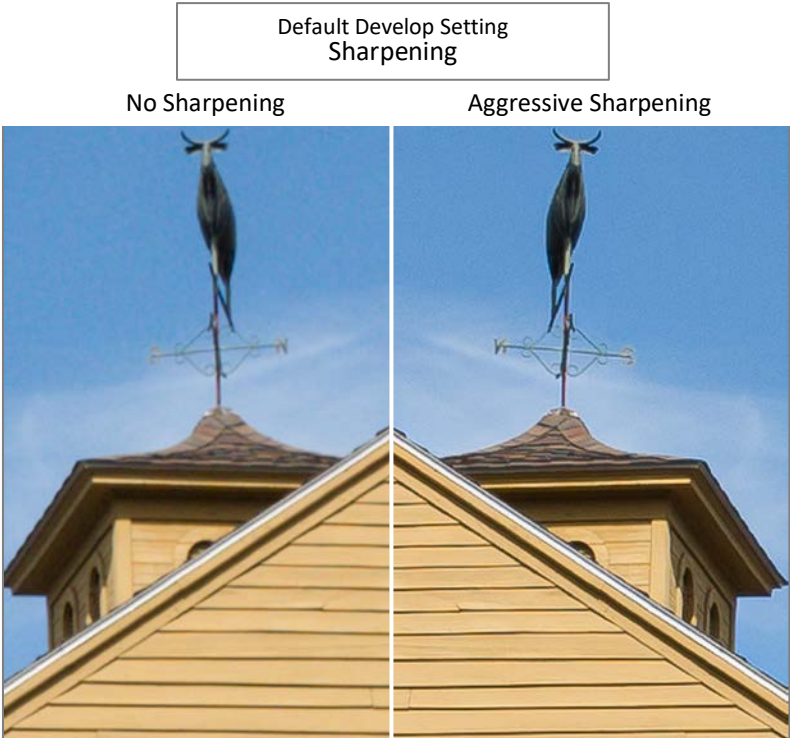
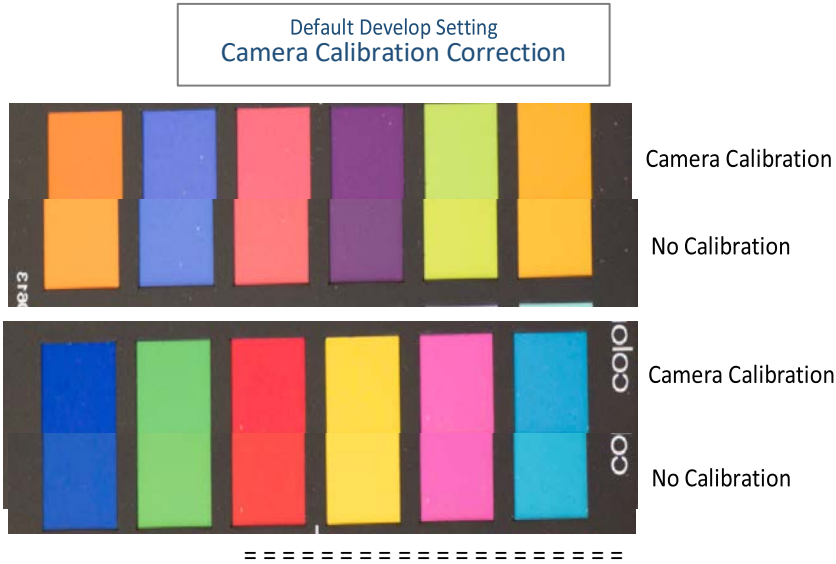
Correction Not Enable



Correction Enable



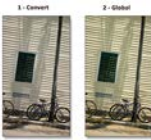
...More Default Develop Setting Comparisons





*"To stop and look at your work  
is the most important thing you can do."*

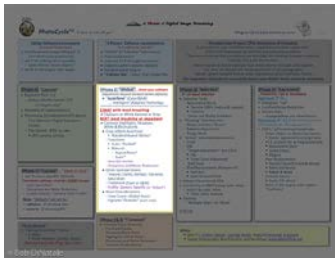
*Annie Leibovitz*



## The 4-Phases



## Phase 2: Global



### PhotoCycle™

#### Phase 2 Global

*In Phase 2, we apply adjustments that are applied to the entire image.*

You can try very hard to apply adjustments for every part of the photo. No matter how hard you try...given the nature of light and shadows, this is pretty much an impossible task.

### [Phase 2] "Global"

(Adjustments beyond standard Camera defaults)

- **"AutoTone"** (Color/B&W)  
... "Intelligent"/Adaptive Technology

### START with most troubling

- Exposure or White Balance or Crop\*  
\*(effects AutoTone)

### NEXT most troubling or important

- Contrast; Highlights; Shadows; White & Black points
- Other "Basic" Considerations:
  - Texture; Clarity; Dehaze
  - Vibrance; Saturation
- More Considerations:
  - Tone Curve –Global (basic)
  - Sharpness and Noise Reduction
    - Texture; Clarity; Detail interplay
  - Lens Correction
  - Transform
    - Auto; "Guided"
    - Manual:
      - Aspect Ratio; Scale
  - Vignette "Globally" (post crop)
  - Profile: Camera Specific (or "Default")
  - Crop Aspect Ratios: Standard? Other?
  - Treatment (Color or B&W)



## Phase 2: Global Intro

You can try very hard to apply *global adjustments* to satisfy every part of the photo. No matter how hard you try...given the nature of light and shadows, this is pretty much an impossible task.

*What's Our Goal During this Phase?* To make the best global adjustments that satisfy *most* of the captured image. We'll need the next phase of digital processing to address those specific areas that need *selective adjustments*.

*Where Do We Start?* If your software supports it, the first adjustment is to apply an "*auto*" *tonal adjustment*. Here is where the software, some better than others, will analyze the data in the image capture and present you with an optimization of that scene's captured data.

### *Optimizing Your Captured Data with Adaptive Technology*

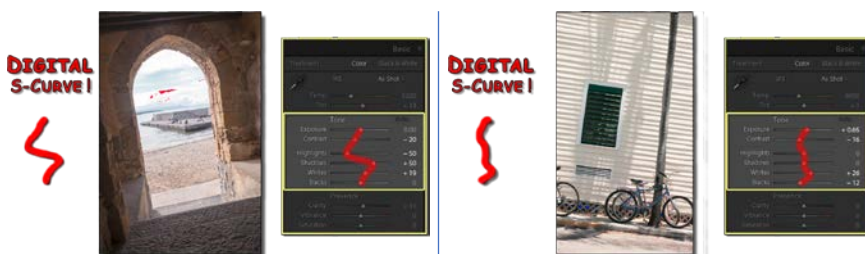
When processing a photo for optimum adjustments, many software have a preference for the order of using sliders. Adobe's Camera Raw (ACR) software optimize processing using the sliders "top-down". No matter how many times I try to process in this manner, I always end up with a satisfactory result before touching all the sliders – always wondering if I obtained optimum processing.

Adobe's AutoTone" applies its adaptive processing technology from the "top down". Because of this, my first adjustment is always "Auto Tone". Although "AutoTone" rarely produces the *final* results - I feel comfortable that my image is processed optimally. From here, I proceed in a "touchy-feely" manner by looking at the screen while adjusting the sliders... I suggest you do the same.

## A Word About "AutoTone"

The more advanced software use "adaptive technology". What this means is the software programs will *make data based on the data it sees* in the captured image. When you then use "AutoTone", the processing software reshapes its unique "curve" to optimize the tones throughout the image. It moderates changes is tonal relationship as well as finds the "black" & "White" points.

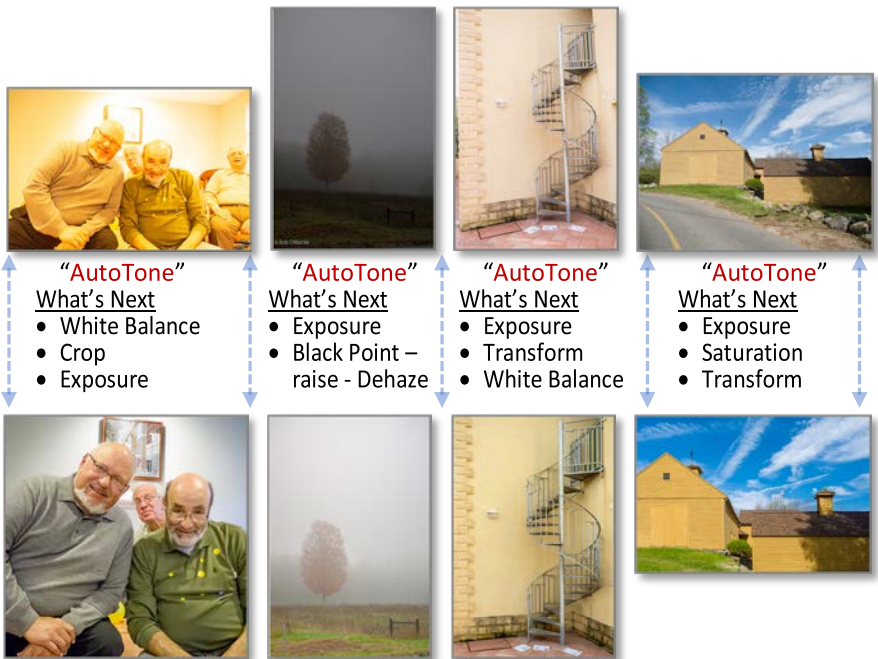
As I mentioned in the introduction, unlike a roll of photographic film, digital processing is unique for each digital exposure. And, if you remember, I said that these "digital curves" can be very unique... "Contrasty" scenes tend to have a "digital curve" with very abrupt angle changes while a "digital curve" of lower contrast images tend to have less dramatic angle changes. Here are 2 example of adaptive technology curves for very different scenes:



## After “AutoTone” - What’s Next?

**“START with most troubling”** aspect of the image that needs processing. This could be exposure; white balance or even cropping\*(See examples below). Once you address the most troubling aspect of your image – what “next”? ...the “next” more troubling aspect that needs processing.

This “next” approach to digital processing continues, addressing the “NEXT” most troubling or “important” aspect of our image. The “Next” approach continues until we are satisfied. Because every image is different, the processing sequence will be different.



### Software: Changing White Balance & “Cropping”

When processing, changing “White Balance” or “Cropping” may affect the overall image. After adjusting either, if a noticeable change occurs you may want to use “AutoTone” again.

### Camera’s White Balance Setting

Setting your camera to Auto White Balance [AWB] is probably the worst thing you can do. A shot of a red rose with a green grass background compared to a full-frame close-up to the same rose will produce different color roses! Set you camera’s WB to “Daylight” the adjust your final WB when processing.

### White Balance: In the Camera

I set my camera's White Balance to Daylight... regardless of the time of day or being indoors or outdoors.

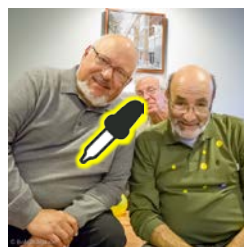
I have my "white balance" default in my software set to "As Shot". This gives me results very much like shooting film. Setting your camera's WB to "Daylight" will provide you with a more representative and predictable rendition of the scene's color temperature: Shooting at the "magic hour" you'll get rich warm tones; shoot later in the day, or in snow and you'll get those cool blue tones.

### White Balance: In the Software

A word about final "white balance", there is no "correct" white balance – *it is what you feel* – or *what you felt about the scene*. I shoot all my exposures with



the white balance set at "Daylight" then correct for white balance, if necessary, when processing. Simply use the software's "White Picker" and click on a *neutral tone* in the photo. In this "Grandfathers" photo...I clicked on George's



gray shirt.

In this foggy morning on the Rhone river below... again using the "White Picker" on the white boat will remove the foggy morning blue cast and get the boat to neutral. Hmm, both White Balances work – they just make a different statement...



...or maybe a "white balance"  
somewhere in the middle  
...it's your Artistic Expression!





### Merging Photos (Panoramas and High-Density Range Files)

Before continuing to the next phase, we need to discuss merging photo files. We “Photo Merge” files to produce “Panoramas” and “High Dynamic Range” [HDR] photos.

Photo merging belongs in Phase 2-Global because after merging multiple sections of a panorama or multiple exposures into an HDR file, you will have one resulting file that will need *global processing*.

#### Photo Merge: Panoramas



There is no limit to the number of sections (captures) to use when stitching together a panorama. Also, panoramas do not need to be just in a horizontal row, you can run 4 pictures *left to right* then move up a little take 4 more *right to left* then move up a little take 4 more *left to right*. Now run it through your panorama software and let it work... and *voila!* – a French cathedral.



Initially, “stitching” panoramas was not so easy. It took lots of pain for good results - you needed to match exposures, keep the horizon level using a tripod, use the proper focal length lens, etc. *Oh, a galaxy far, far away.*

Now, you just need to take multiple overlapping photos... Shoot each exposure with a minimal of about one third overlap and cover the area you want in your panorama - *that should do it*. No calculating exposure, no lining up horizons, a change in camera tilt - not a problem for today software. The current state of panorama software will - balance exposure, match horizon lines and change tilt if necessary - *have I mentioned how smart today’s software is?*

### A Few Panorama Tips

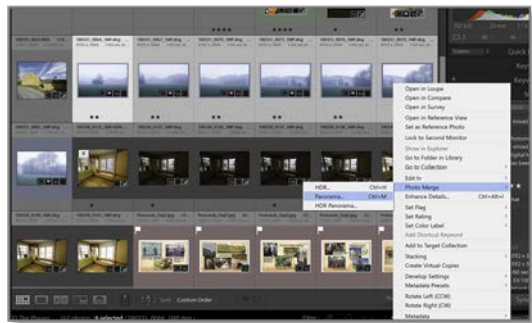
You should be aware that you will get less distortion if you take twice as many telephoto (narrow angle) sections... Say 10 telephoto lens sections versus 5 normal focal length sections versus 3 wide-angle sections.

Factually... if I were taking pictures for an architect of *their* building – I would take more narrow angle sections for a more accurate rendition – though I'm not sure I'd use a tripod.

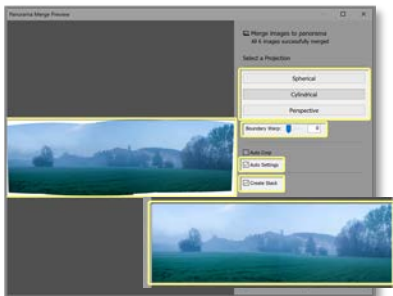
Creatively... the game is on. Case-in-point, the previous 12- panel panorama example of the cathedral in Bourges, France.

There are many ways to *stitch* or merge panoramas. You can use Photoshop, Lightroom or a third-party software. If you have Lightroom - use Lightroom! Its processing is advanced and is simple to use.

Select the thumbnail photos to merge for a panorama, right click and select "Photo Merge"> then "Panorama..." then click the "Merge" button. Lightrooms panorama will not only stitch the panels together, it will detect the camera tilts, exposures changes and align the horizon. It will detect the best spherical correction and "autotune" your exposure - *I wonder if it does dishes.*



Now here is the best part of the process. Before saving, you'll have the choice to remove the white spaces above and below the panorama. You can



crop, so 1990's, or you can choose "Boundary Warp" – here is a glimpse of *photography future*. The software will fill the white areas by analyzing neighboring pixels and intelligently create pixels to fill to the boundary!

I guess you could explore other panorama software, but, when you have the tool that does everything you need... *why look for more!*

**“High Dynamic Range” [HDR]**

We just discussed the power of Lightroom when making panoramas... Well it's even easier with HDR merges.

Select the thumbnail photos to merge for your HDR photo, right click and select “Photo Merge”> HDR...”

Your options will be “Auto Align”, “Auto Settings” – check those boxes. You’ll also have options for “Deghost Amount”, the degree of movement between exposures that it will remove. “Low” ghosting means you’ll see more blur, “High” ghosting removes the most. *(I use “High” - unless I want to show blur from movement between photos.)*

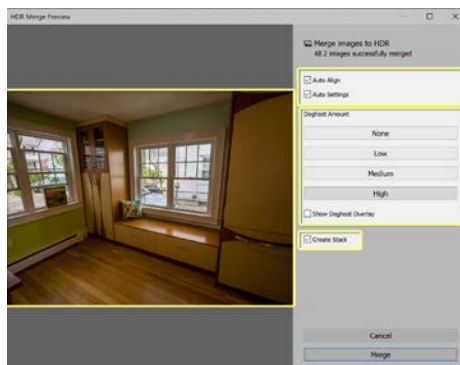
There is also a box “Show Deghost Overlay” - check this if you want to see where the magic happened.

The last box is “Create Stacks”. If this is checked, when you click the “Merge” button, the software will merge the HDR. Then, when done, it will take the files used plus the combined HDR files and put them into one stack so you only view the created HDR.

The hidden gem here is that Lightroom makes a 32-bit file! Not a 16 bit but a 32-bit file. Your “Exposure” slider that had extremes of -5 to +5 stops, now goes from a -10 to a +10 stops! There's plenty of processing room in a 32-bit file.

For all those people who want to know if you can do an “HDR Panorama”...

Adobe's way ahead of us... there is a button for that to.





### A Few HDR Tips

In the example here, I have 7 exposures one-stop apart – my standard. I have this setting in one of my camera's *custom setting*. When I see a dynamic range situation, I quickly rotate my camera dial to that custom setting, hold down the shutter release and in less than ½second, I have 7 exposures one-stop apart.

I don't think much more about the scene - I just go on shooting. Not much more I can do – I captured a ton of data. I'll check out the HDR successes when I get back to Lightroom.

I don't use all 7 exposures - I think that's overkill. I usually use exposures 1, 3, 5, & 7 or EV -3, -1, +1, +3. That's it!



The inset is the same HDR file adjusted in Lightroom using the "Transform" - "Auto" setting to remove perspective distortion.

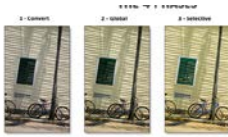






*"Dodging and burning are steps to take care of mistakes  
God made in establishing tonal relationships."*

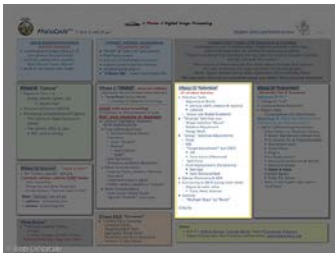
Ansel Adams



## The 4-Phases



# Phase 3: Selective



### PhotoCycle™

#### Phase 3 Selective

*In Phase-3 Selective, we will apply localized adjustments that will be unique to each image.*

*Here, the photographer's sensitivity and observation of tonal relationship is critical.*



### [Phase 3] "Selective"

*...It's all about Selection*

- Selective Tools
  - Adjustment Brush
    - Density 100% (*reduce & repaint*)
    - Colorize
  - Linear and Radial Gradients
- "Shaping" Selective area
  - Shape selection "Brush"
  - Relative Adjustment
  - Range Mask
- "Group" Selective Adjustments
  - Crop
  - HSL
  - "Target Adjustment" tool [TAT]
    - HSL (B&W)
    - Tone Curve (*Advanced*)
  - Pixel Replacement (*Parametric*)
    - Red-Eye
    - Spot Removal/Add
- Merge: Panorama & HDR
- Converting to B&W (*using Color data*)
  - Adjust by color value
    - Tone, Auto, Manual
- General:
  - "Multiple Ways" to "Reset"



### **Phase 3: Selective**

***It is all about selection... if you can select it, you can affect it!***

This is what Phase-3 “Selective” is all about.



How effective we can be here depends on:

- 1.) our sensitivity to the *tonal relationships* in the image, and
- 2.) the ability to select those areas.

Today's processing software give us powerful tools to do just that –select areas and adjust tonal relationships. We have many tools. They vary as to how they select areas, and once selected, how they can affect those areas.

To Paraphrase Ansel Adams:

***“Selective Adjustments are steps to take care of mistakes God made in establishing tonal relationships.”***

#### **Power of Multiple Adjustable Attributes:**

What makes these Selective tools so powerful is the number of attributes that can be applied to these “Selected” areas. We need to re-think our Photoshop experience... where we created a “mask” or ‘selection” for a *single adjustment*. We needed to create *multiple masks with one adjustment each* instead of the power we have now - to create *one selection with multiple adjustments*!

Ponder this new paradigm:

*Using multiple tools in one image with the ability to edit then re-edit selected areas for Exposure; Brightness; Contrast; Saturation; Clarity; Sharpness, Color; etc.... without loss of image data is unparalleled in photographic processing.*

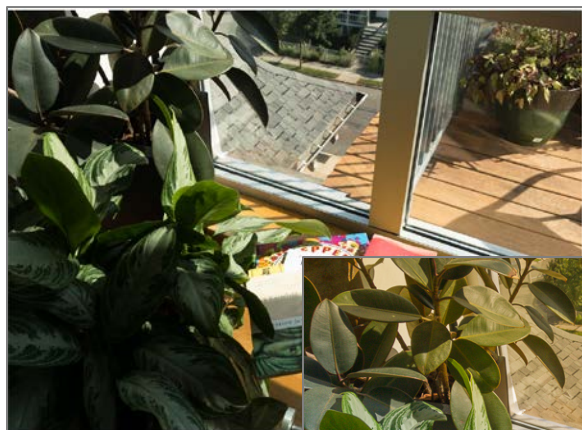


Let's explore this important phase

## How to View This “Selective” Example

On this page, the left photo shows the results after Phase 1-Convert & the first step in Phase 2-Global - “Auto Tone” (*this is done to every processed photo before “the next step”*). The right photo shows the final processed photo with *multiple* “Selective Adjustments” applied.

### **Phase 1 + “AutoTone”**



**Final Processed Photo**



### “Individual-Selective Adjustments”

The next page shows the individual areas adjusted and the tool used.

- The “pin” ● represents the location of the tool.
- The **red area (“mask”)** is the “selected area” that is being adjusted.
- The **BLUE text** is the tool used; the **RED text** indicates the adjustment (*see below*)
  - A.) **Radial gradient** – **toning down**; lowering contrast and desaturating edges **gradually**. Then, erasing the mask (effect) in the lower-left while **shaping the gradient around the subject**.
  - B.) **Adjustment Brush** **lowering contrast** while bringing edge clarity and **raising exposure** all to **lighten the leaves and the shadow**
  - C.) **Linear Gradient** from the upper-right of the photo **toning down the highlight and contrast**
  - D.) is the sum of all the adjustments above

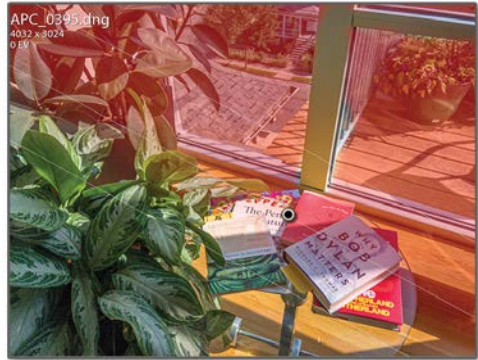
Raw Capture on iPhone

Shot by window with multiple “Selective Adjustments”

Selective Adjustments:

- Radial Gradient - *selective vignette*
- Brush lower left - *lighten plant*
- Linear Gradient - *Lighten shadows in upper right*

**A. Radial Gradient**



**B. Adjustment Brush**



**C. Linear Gradient**



**D. Combined Adjustments**



### **"How to View These "Selective Examples"**

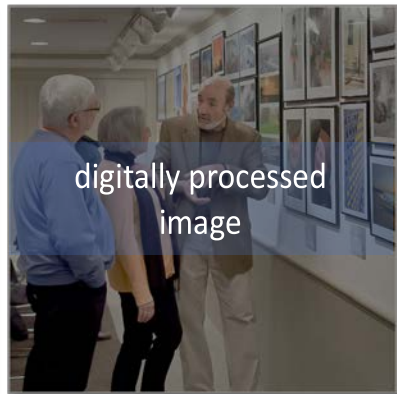
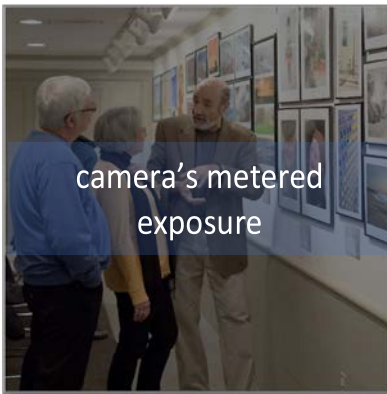
These examples are presented in 3 panels:

1. As it was captured - the camera's metered exposure for the scene.
2. The digitally processed image, and
3. The shaded "mask" used to achieve the processed image.

This "mask" is made with multiple tools as the previous example. The "mask" you see is a composite of all the tools used in the adjustment.

#### In the Description Box:

Is the **title**; **the tools** used in Red; and **their effect** in Blue.



#### Selective Adjustment: "Description Goes Here"

- Explanation of desired effect: *Tool(s) used select adjustment area*



Selective Adjustment: Harsh Light



Selective Adjustment: Harsh Light

- Lighten lower left corner - *Selected with linear Gradient*
- Lightened Body Shadows: *multiple Brushes, brush w/multiple densities*
  - o multiple brushes of various density to lighten body shadows using "Exposure"
- Increase detail in dark areas: *Selected with Brush*
  - o using friendly pairs: Contrast↓/Clarity↑





Selective Adjustment: Keys' Bikes



Selective Adjustment: Vivid Floridian Light & Color

- Saturate yellow wall: *Selected w/Target Adjustment Tool [TAT]*
- Open shadows on shutter: *w/Brush Exposure ↑ / Shadow ↑*
  - o adjustments "Shadow" slider;
  - o Friendly Pairs: Contrast ↓ / Clarity ↑
  - o Saturate Green shutters with TAT.
- Removed "grate": *with pixel replacement*

Selective Adjustment: Yellow-Hat Lady



Selective Adjustment: Yellow-Hat Lady

- Lighten left side of face: *Brush w/ Exposure* ↑ & *Contrast* ↓
- Darkened right side of face: *Brush w/ Highlight* ↓ / *Whites* ↑ / *Exposure* ↓
- Blurred, lowered Contrast & Saturation of background. *Radial gradient*
- Shaped Edge Vignette: *Radial gradient*
- Lightened & brightened strawberries: *Brush w/Exposure* ↑ / *Saturation* ↑

Selective Adjustment: P-Town BreakfastSelective Adjustment: P-town Breakfast

- Lighten many shadow areas with one brush at various densities
- Windows toned down: *Brush w/ Exposure* ↓ / *Contrast* ↓ / *Whites* ↑
- White towel on counter: *Brush w/ Exposure* ↓ / *Contrast* ↓
- Lowered contrast & brightness of light on left to balance room light:  
*Linear Gradient w/ Highlight* ↓ / *Exposure* ↓ / *Contrast* ↓ / *Whites* ↑
- Lightened & Shaped cook: *Brush w/ Shadows* ↑ / *Exposure* ↑  
using "Friendly Pairs" *Contrast* ↓ / *Clarity* ↑

Selective Adjustment: Snap Peas

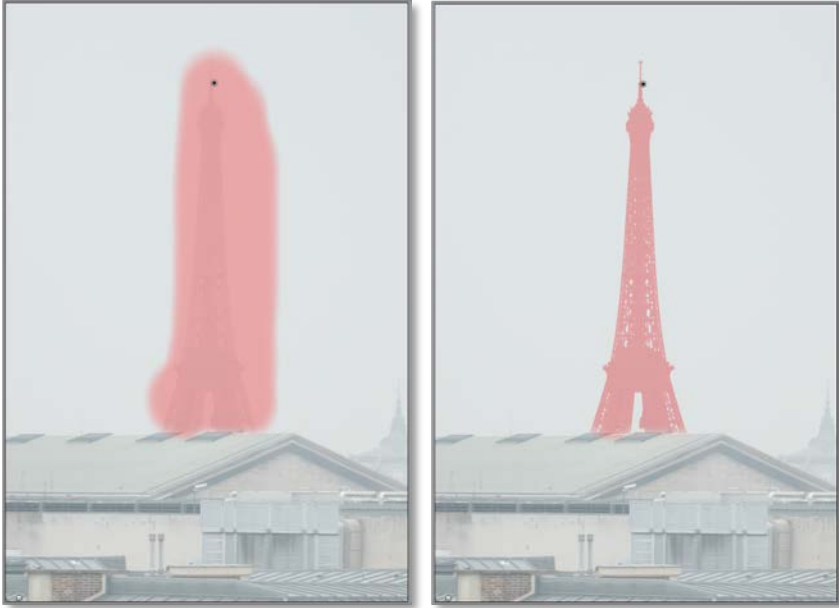


Selective Adjustment: Snap Peas

- Cloned Peas to fill bottom left *w/Clone tool*
- sharpened & enhanced depth to pod: *Brush w/ Sharpen ↑ / Texture ↑*
- Blurred, lowered Contrast & Saturation of background. *Radial gradient*
- Shaped Edge Vignette: *Radial gradient*

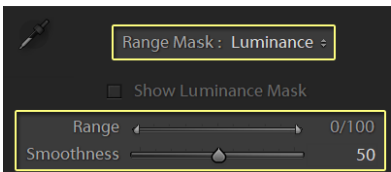
### Selective Adjustment: The Eiffel Mask

The emergence of *artificial intelligence [AI]* in our processing software provides us with more *magical* tools. Creating a detailed mask for the Eiffel Tower could be tricky, but thanks to AI we can accomplish this with one slider quite easily.

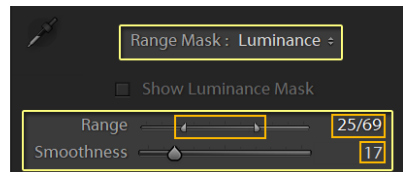


### Selective Adjustment: The Eiffel Mask

- Create a rough selection covering the entire tower: **Adjustment Brush**
- At the bottom of the adjustment tool, add a “Range Mask” and select an attribute: *in this case, “luminance”* [Inset 1]
- Contract the “luminance range” by moving the markers at each end of the sliders... *Raise the black point and lower the white point to adjust the mask – you will see the mask trim in real time.*
  - o Adjusting the “Smoothness” slider will refine (tighten/expand) the mask. [Inset 2]



[Inset 1]



[Inset 2]



Pixel Replacement: *Azorean Aqueduct w/ Family & Unknown Woman in Red*

Visiting this Azorean aqueduct provided a great family photo-op. When editing the trip’s photos, I noticed a stranger in red. Here is where a creative use of the “Clone Tool” remedied the situation and removed the stranger in red.



Original Capture



Removed stranger woman in red



Cloned little girl in lower right to middle of trail



Replaced little girl on lower right with grass



Leveled aqueduct wall causing little girl’s position to bottom



Repositioned girl to end of trail. Final Processed Image

Selective Adjustment: *Hannah and the Target Adjustment Tool*Selective Adjustment: Hannah

- Changed green dress to purple: *w/Target Adjustment Tool/Hue:*

Selective Adjustment: Hannah

- Added sky backdrop using *"pixel replacement"*:

1. *Opened photo from Lightroom into Photoshop as a "Smart object"*
2. *Opened "sky" photo and placed layer under little girl's "Smart Object" layer*
3. *"Selected" the background behind the little girl and created a mask to reveal "sky" backdrop*







**“Friendly Pairs”**

In the *PhotoCycle™* there is a panel titled “*Friendly Pairs*”. The adjustment in this panel are sliders that interplay nicely with each other. That is, they complement each other and are usually applied when refining in Phase 3 Selective. These are best applied using masked selective tools.



*Friendly Pairs: Contrast/Clarity (\*see Frequency)*

Less “Contrast” brings out detail but causes “flat” tones. When adding “Clarity”, we add edge sharpness that adds contrast while maintain detail from lowering “Contrast” ... a great technique for bringing out detail in the foreground of a sunset, a black crow in a tree, a black tuxedo.



Gradient Tool  
w/Luminance Range Mask



lower Contrast ↓



add Clarity ↑

Friendly Pairs: Shadows/Black Point

Move the “Blacks” slider to find the photo’s “black-point”. Now, move the “Shadows” slider up aggressively to reveal shadow detail. This may need to be repeated several times to hone-in on the final adjustments:

- aggressive shadow detail may move the black point so keep checking the black point.
- Depending on the *frequency* of the subject, adding some edge sharpening could bring out more detail.

Gradient Tool  
w/Luminance Range Mask



Set “Black Point”; Raise Shadows 🔼

Friendly Pairs: Highlights/ White Point

To bring out more detail in the bright areas, use the friendly pairs of “Highlights” and “Whites ...

- o lower the “Highlights” slider while raising the “Whites”

Again, it is a good idea to add these adjustments to a selective tool with a refines mask.



Brush Tool  
w/Luminance Range Mask



lower “Highlights” ↓; raise Whites ↑

Friendly Pairs: Sharpness and Noise Reduction

The combination of Sharpness and Noise Reduction will help you remove noise from your photos. This is especially useful when trying to remove lots of noise from ISO 6,400 and higher. The concept of using these friendly pairs is to:

- Aggressively over sharpen – see white “crystalize” edges on objects, then
- use the Luminance (softening) slider to round-offs the edge effect of over sharpening.

- Radius and Color sliders can further improve in noise reduction...

*Most of my knowledge (plus years of application) come from the readings of Jeff Schewe’s book, The Digital Negative. I can’t recommend this book enough.*



**3x Magnification**





## Frequency

There are several adjustment sliders: *Clarity; Texture; Dehaze*, that are mistaken for being mid-tone contrast adjustments... they are not. *They are based on edge contrast* – very similar to the Sharpen slider. Matter of fact, you can add *Texture; Clarity; Dehaze*; to the “Sharpen” family of sliders.

To quote John Paul Caponigro: [\[link to his article - click here\]](#)

*The differences between these tools can be found in the way they handle frequencies of detail; low, moderate high fine lines texture, and grain.*

**Frequency is an important part of sharpening and edge contrast.**

The same amount of adjustment for any one of these sliders from the “Sharpen” family will have a different result depending on the frequency of the edges – *a.k.a. “texture”*.

A good example would be a door that is half glass and half screen. There is no *texture frequency* to the glass portion but there is a lot of *texture frequency* on the screen portion. Applying a global adjustment to the door, in this case “Sharpening”, will result in two different amounts of edge sharpening. (*see below*)

\*



*Aggressive Global Sharpening –  
effecting mostly screen area.*

**Progression of increasing  
“edge contrast” tools –  
from none to most**



1-Curves



2-Clarity



3-Dehaze



4-Texture



5-Sharpness

You need to approach Photoshop in a similar manner. There are graphic designers who use Bezier curves, design fonts, move *object-oriented* elements in to Adobe Illustrator; ...and so on, and so on, and so on!

If we stay in our “photographic domain”, there may be a possibility to not get overwhelmed by Photoshop. There are just a few important features a photographer needs to understand – *maybe 3% of Photoshop is for Photographers!* If you tried unsuccessfully or have been holding back to take the Photoshop plunge, hopefully after reading this section you’ll take that extra step and give Photoshop a(nother) try.



*"You are responsible for every part of your image...  
even the parts you're not interested in."*

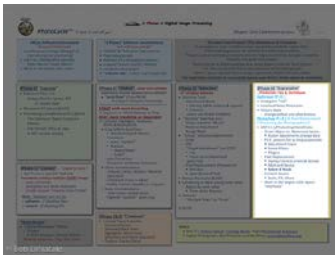
Jay Maisel



## The 4-Phases



## Phase 4: **Expressive**



### PhotoCycle™

#### Phase 4 Expressive

*In Phase-4 Expressive,  
we refine our photo in  
the hopes of expressing  
our "Artist's Vision".*



### [Phase 4] **"Expressive"**

#### **...Production Tips & Techniques**

#### **Lightroom [P.I.E.]**

- Histogram "Lab"
- Localized Noise Reduction
- History State
  - change before and after history

#### **Photoshop [P.I.E.]**

#### **... "Photoshop for Photographers"**

- LR /PS Handshake (P.I.E.)
- Layers:
  - Smart Objects (P.I.E. \*) vs. Pixel
  - \* maintain P.I.E. (original data)... as long as possible
  - Smart Filters & Plugins
  - Layer Masks (Selection)
  - Adjustment Layers
- Pixel Replacement
  - Stamp/Clone (Current & Below)
  - Copy/Cover/Reveal
- Selection
- Content Aware
  - Scale, Fill, Move

*\* Work in the largest color space: "ProPhoto"*



## **Phase 4: Expressive: Pixel Editing Software**

*Phase-4 Expressive, is where we will further refine your photo in the hopes of expressing your "Artist's Vision".*

### **Pixel Replacement**

One of the most important, and fun features is "pixel replacement". You know what I mean, removing telephone wires, a hydrant, superfluous or distracting elements... all with the goal of enhancing the photo.

Sometime the pixel replacement is out of necessity; sometimes it's for creative expression: adding a flock of geese; replacing a cloud structure to better fit around our building; masking the main subject and placing it on a totally different background.

### **This phase can be broken into 2 discrete sections...**

- 1) Simple non-destructive [P.I.E.] processing and
- 2) more advanced pixel-editing processing techniques

***A pixel-editing software is essential when processing the digital image...  
...Photoshop is the ultimate pixel editing software.***

### **A Word on Photoshop**

Many have has taken a stab at learning Photoshop. At first blush it seems overwhelming. After the 2nd, 3rd and *maybe* 4th, try... it not only still seems overwhelming, it seems nearly impossible to conquer.

I know, I've taught many Photoshop courses – I've seen the befuddled look on 90% of the class. The other 10% were either smart and got it... *or, didn't know they weren't getting it!*



I like to make a parallel to those of us who use Microsoft's Excel spreadsheet program. If you ask somebody if they know Excel, they say, "Oh yeah, I use it all the time at work". Excuse me, take a deeper look into Excel... *Nobody, nobody, nobody knows all of Excel.* Some may know financial equations, others scientific functions, while most of us use simple mathematic relationships of one cell to another... *But nobody, I say nobody understands all of Excel.*

Photoshop is as complex as Excel! Graphic designers use Bezier curves, re-design fonts, move *object elements* into Adobe Illustrator; etc. However, if we stay in our "photographic domain", there may be a possibility to not get overwhelmed by Photoshop. There are just a few important tools a photographer needs to understand – ***maybe 3% of Photoshop is for Photographers!***

If you've tried unsuccessfully or have been holding back to take the Photoshop plunge, hopefully after reading this section you'll take that extra step and give Photoshop a/*another* try.

## Photoshop Basic Examples

All the following examples start after the first three Phase of processing the digital image. All examples followed the PhotoCycle™ workflow from:

- 0-Capture... defining the scene with 1s & 0s and saved in camera raw format;
- 1-Convert... processing on import has been set when we established our *camera develop defaults* settings;
- Phases 2- Global & 3-Selective... have been completed with *craft* and *creative awareness* adjusting the scene's tonal relationships.

*It is now time for Phase 4-Expressive.*

Although the *expressive* phase can use both camera raw and Photoshop processing – these examples will show how using *Basic Photoshop techniques* can quickly get us to our *expressive photograph*.

### **“How to View These Photoshop “Basic Examples”**

Each example has a title and description. The description explains the scene as it was captured and the Artist's Vision on how the Photoshop work could remedy the photographer's issue... Phase 4-Expressive.

*These examples are presented in 3 panels:*

- The 1<sup>st</sup> panel shows the digitally processed image photo through the 1<sup>st</sup> 3 Phases of the processing PhotoCycle™, and before any Photoshop work.
- The 2<sup>nd</sup> panel is after Photoshop work
- The 3<sup>rd</sup> panel shows Photoshop's "Layers Palette" with the layer(s) that altered the image.

Let's begin with some fun *and Easy* aspects of  
Phase 4-Expressive using Photoshop

### A Note on This Book's Photoshop Examples

These examples are not intended to be a tutorial for learning Photoshop, but:

- to see how photographers continue their artistic expression using this powerful pixel editing tool;
- to understand the importance of a pixel-based editor to the digital photographer when processing the digital image.

The first set of examples show some *basic* Photoshop processing that go beyond the scope of most camera-raw software. The second set second of examples will use some relevant "Photoshop for Photographers" processing tools. *(A list of the Photoshop tools essential to the digital photographer are listed at the end of this chapter.)*

*Some of these enhancements can be done quickly, others - Not so much!*

## Pixel Replacement

### Jaguar XKE [Note the wires over the building behind his right elbow]

Beautiful Florida day, beautiful prime colors, beautiful white fleecy clouds... and a *not-so-beautiful* pole and wire in front of the cloud...*and maybe remove some scratches on the side panel and yellow parking lines.*

Here are the Photoshop layers used:

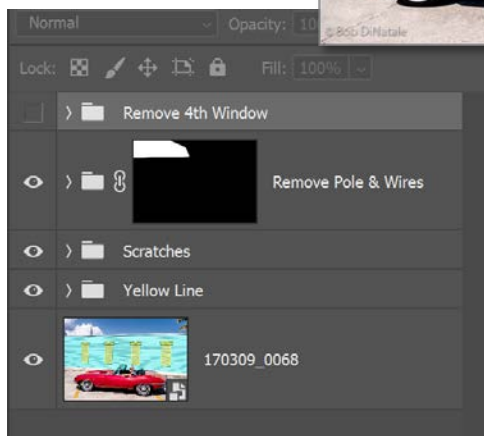
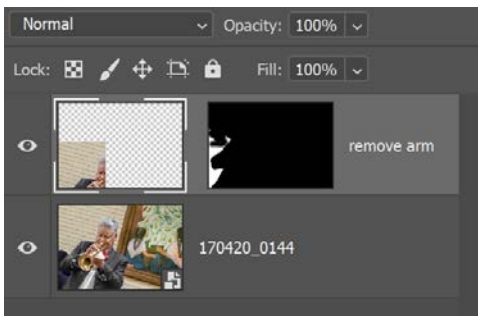


Photo of Trumpeter *[Not the person behind his right elbow]*

A wonderful "Mariachi band" playing for my San Antonio "family" in a small Mexican restaurant. Lots of patrons crammed in... unfortunately one was sitting *behind the right arm of my great trumpeter* shot!

Here are the Photoshop layers used:

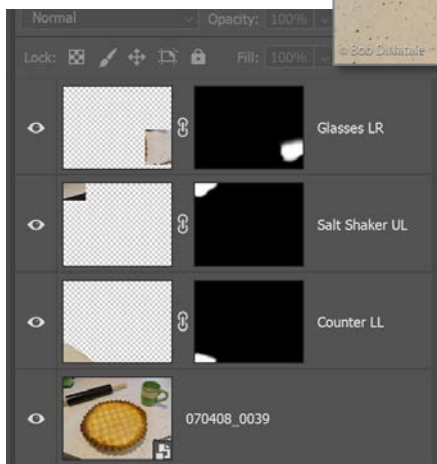


Easter Pie [and other not-so-desirable stuff]

An Italian Easter tradition - Ricotta-Rice Pie. Looked so good I wanted to photograph it. It was during editing that I saw: 1) my glasses lower-right; 2) edge of counter\_lower-left; 3) the blue saltshaker upper-left...

... and was the color of that cup red or green?

Here are the Photoshop layers used:



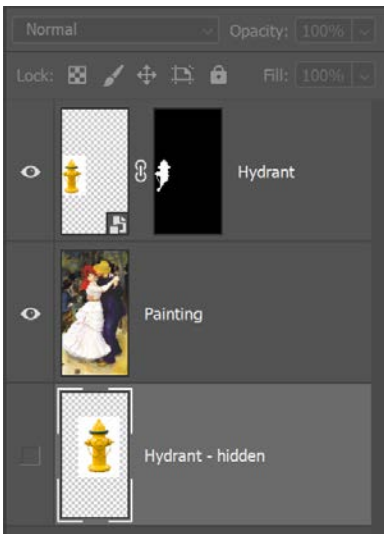
*I changed the hue of the red cup to green in camera raw using the target adjustment tool.*

## Renoir's Hydrant

Ok, I wouldn't have painted the hydrant in either!

He had the choice to paint what he wanted to show us – Using Photoshop, I also have the choice as to what I want to show!

...after all, *this is not Photo-Journalism – It's art!*



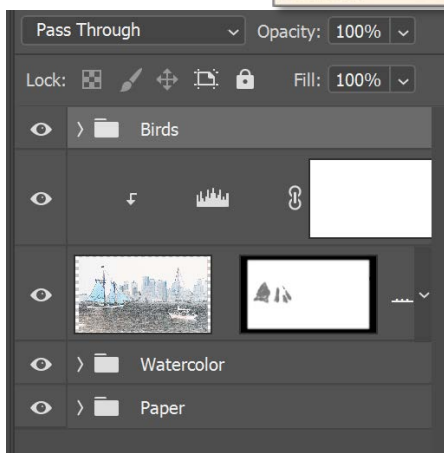


Pixel Adding!!!

Nice Gulls *[when they were there]*

Evening sunset at Boston's Waterfront. Beautiful scene as boats and gulls moved past... *not, however on the same timeline.* After some adjustments in camera raw - *brightening the scene and adjusting the White Balance...* it was time to *add the gulls in Photoshop!*

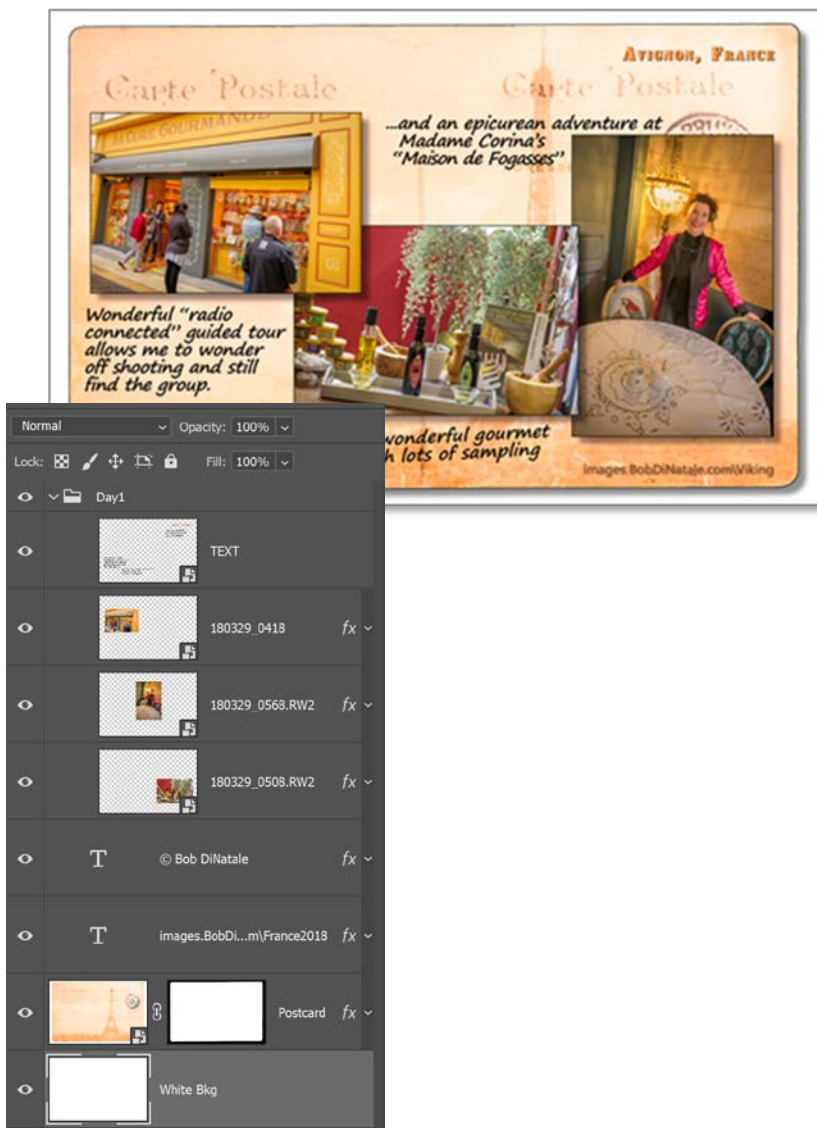
Adding a soft white vignette around the scene gave it a nice finish.



## Collaging

Post Cards from France

Collages are easy and fun to do. Just open the photos you want to collage in separate photoshop layers – [Hint] convert each layer to a “Smart Object”. You can then size and rotate each layer many times without any loss of data until you are satisfied with their final position.







*"You don't take a photograph, you make it."*

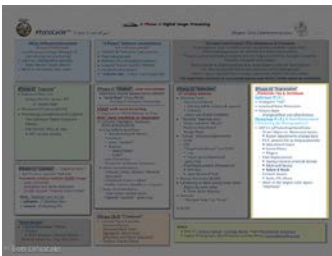
*Ansel Adams*



## The 4-Phases



# Phase 4: **Expressive** *Photoshop for Photographers*



## PhotoCycle™

### Phase 4 Expressive

*In this section we  
continue to refine our  
photo using Photoshop  
techniques for  
Photographers*



## [Phase 4] “Expressive” *...Production Tips & Techniques* Lightroom [P.I.E.]

- Histogram “Lab”
- Localized Noise Reduction
- History State
  - change before and after history

## Photoshop [P.I.E.] *...“Photoshop for Photographers”*

- LR /PS Handshake (P.I.E.)
- Layers:
  - Smart Objects (P.I.E.\*) vs. Pixel
    - \* maintain P.I.E. (original data)
    - ... as long as possible
  - Smart Filters & Plugins
  - Layer Masks (Selection)
  - Adjustment Layers
- Pixel Replacement
  - Stamp/Clone (Current & Below)
  - Copy/Cover/Reveal
- Selection
- Content Aware
  - Scale, Fill, Move

\* Work in the largest color space: “ProPhoto

## “Photoshop for Photographers”

The examples in this “Photoshop for Photographers” section will demonstrate more Advanced Photoshop techniques. Again, all examples start after the first 3 Phases of *processing the digital image*.

At the beginning of this Phase 4 section, I stated you DO NOT need to learn all of Photoshop... you probably only need to know about 3% of it!

There are a few important Photoshop tools the photographer needs to know. I teach a course called “Photoshop for Photographers”. If we stay within our “photographic domain”, there a good a possibility to not get overwhelmed.

*Here, I will address some of the more relevant Photoshop for Photographers tools.*

### Photoshop for Photographers

Below is a list of Essential Photoshop Tools a Photographer needs to know.

#### **Basic**

- Pixel Replacement
  - Resize: Image/Canvas
  - Copy pixels to new layer
- Layer
  - Pixel laver vs. Smart Object Layer
  - change “layer” order
  - Layer Mask
  - Layer Opacity
  - Clone new Layer Via Copy
- Selection
- 
- Transform
- Clone/Stamp tool;
  - Current and Below

#### ○ Masking

#### **Advanced**

- Content Aware– Fill; Scale
- Masking
- Selection Tools
  - Refine Masks:
- Smart Object
- Filters:
  - Smart Filter
- Plug-ins



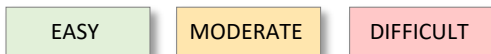
### How to View These “Photoshop for Photographers” Examples

Each example has a title and description. The description explains the photographic situation. The awareness as to, what was happening around me and trying to capture that feeling – “*Pre-Visualization*”

Then observing my feelings when editing “the shoot” and processing the “selected images” through each phase of the 4-Phases... “*Post-Visualization*”.

Then, ultimately trying to achieve the *Pre/Post -Visualization* to help me *make the expressive photograph*.

1. The examples start after Phase 3 was completed.
2. The photos before the description are the *moment of capture*, and after Photoshop work.
3. The small panels are the Photoshop “Layers” palette showing its effect
4. The text box is an explanation of what I was trying to accomplish.
  - a. the color of box indicated the degree of difficulty in Photoshop.



What follows are 6 examples using the photographers’ essential Photoshop tools. I will dissect each Photoshop/pixel editor steps to obtain my *Artist’s Vision*. I call this dissection, the “*Anatomy of an Image™*” [AOI]. My intent is to keep adding these AOIs to this book’s website.

Let’s jump in to Phase 4-Expressive by exploring some “Photoshop for Photographers” tools.

AOI: PEM Girl

Artist's Vision

Moment of Capture



I love this photograph – felt the excitement at the *moment of capture*. While photographing in the oldest room of the Peabody Essex Museum. This young girl was just pondering, looking out these 200-year-old distorted glass windows.

Didn't have to be much of a photographer to notice the scene... All I could think of was, "Please sweetheart, don't move." She didn't, and I got this picture.

Unfortunately, I got some confusing elements: a ½ Windows on the right; don't know what on the left wall. If you look closely, I cut off the top of the arched windows. I never noticed the dumpster in the left window, the construction in the right window; the tilt of the composition, etc.

The moment was right, the other visually confusing elements was not sloppy photography, just an excited photographer trying to capture the moment. There was a lot of clean-up to do. To me, this photograph was worth the effort to try and *make a photograph*:

- Level and crop-out the extra half window on the right
- remove the clutter on the left wall
- replace the construction outside the rightmost window  
...this all took minutes
- Building the curved arches over the windows *pixels* bit by *pixels* bit...  
...*Not so much!*

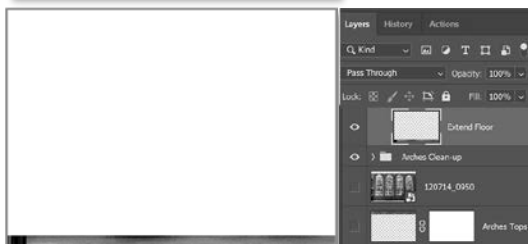
AOI: PEM Girl

Photoshop for Photographers:  
Cloning



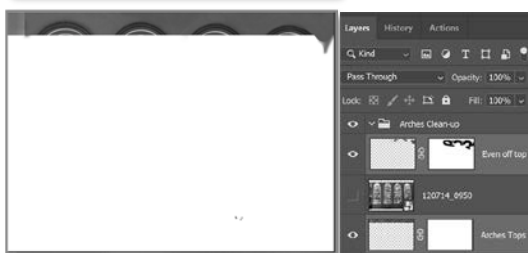
Expanded canvas top & bottom to allow room above to "build" arches and below to extend floor and balanced composition

> **Resize: Image/Canvas**



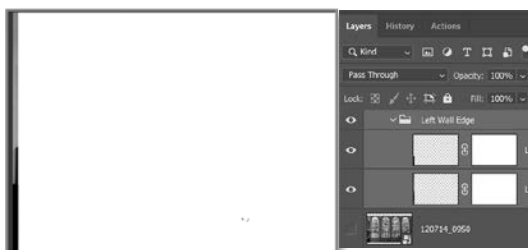
Added floor by cloning existing floor then stretching it to reach bottom of canvas – EASY!

> **Copy pixels to new layer & Transform**



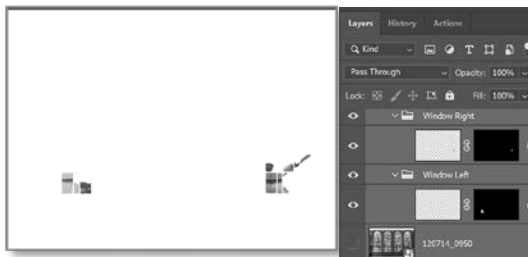
"Built" arches above using "clone tool" to grab like pixel chunks from existing wall and arches

> **Clone/Stamp tool; clone "Current and Below"**



Fixed clutter on left wall. Stretched pixel from edge of fireplace to left border; then cloned small groups of pixels to new layers above

> **Free Transform; Clone/Stamp**



Remove outside clutter behind windows 1 & 4. Used "copy/mat/revel" technique clone adjacent panes of glass to mat dumpster (left) and scaffolding (right)

> **"copy/mat/revel"**

AOI: Family and “Strangers?”

While visiting the Great Sand Dunes National Park near Alamosa Colorado, I stopped to take a photo of my son-in-law, his girlfriend and... *and, 2 other people sitting on the sand dunes that I did not know!*



The Photographer's Task  
...to remove the strangers.

This is easily done using “Content Aware – Fill”. Just circle the area you want to remove, and this tool uses Artificial Intelligence to find similar pixels in the photo. *It then blends the pixels in the area you selected!*

After pausing for a second to absorb what this remarkable tool just did, I now had a void in my 16:9 aspect ratio composition. I needed to remove some of that empty space created by removing the two people.

Again, easily done using “Content Aware – Scale”. This artificial intelligence feature allows you to disproportionally scale from any side to change the aspect ratio *without “distorting” my son-in-law and his girlfriend!* (in this case I moved the right border in until I obtained a 35mm/2:3 aspect ratio)

[ Sidebar ] Content Aware “Scale”

Photoshop analyzed the pixels and scaled areas with similar pixel while not-scaling dissimilar pixels - *my son-in-law, his girlfriend*. Notice the two photos above with different aspect ratio BUT no distortion of the figures.

*Photoshop has many types of “Content Aware” tools: Fill; Patch; Move; Extend; Scale*  
[\[Click Here\]](#) for a video to better understand this powerful feature.

AOI: Family and “Strangers?”

On the rasterized layer, I selected the “sitting couple”. Then, from the menu: selected “Content-Aware Fill” which made the pixel layer below masking the couple. Did a little touch-up with the clone tool.

> Selection: Content Aware - Fill; Clone/Stamp tool



I then duplicated the composite (without sitting couple). From the menu: selected “Content-Aware Scale”. I then pulled the right border in to a 2:3 crop ratio... Photoshop's content-aware did the rest!

> Selection: Content Aware - Fill;  
Clone/Stamp tool





AOI: Wispy Wrap

While riding in the back of a convertible gazing skyward, I saw these wispy clouds resting high in a New England autumn blue sky.

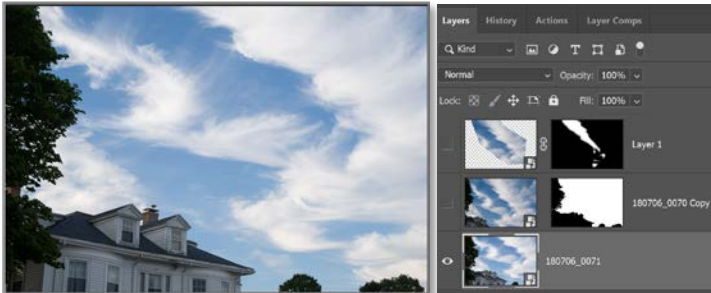
As we drove, pondering as I do, I noticed the changing compositions beneath this wonderful sky.



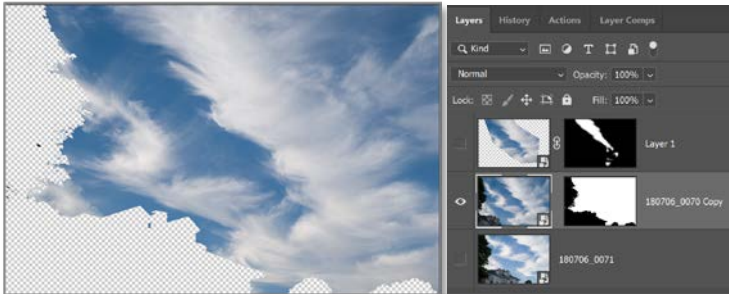
Quickly the dormers of a classic New England house enter my contemplative gaze. Quickly I shot a burst of images - 5 captures: two wasted, one capture too much house and trees; another had a good house size; and the last captured this great cloud formation... *but not one capture where the wispy cloud structure "wrapped" the house. Again, a simple fix for the Photoshop Photographer...*

The Photographer's Task

Take the house from one capture as the base image. Crop as desired. Then get the cloud structure from the last capture and place it on a separate layer behind the house. Finally, move and place the clouds to create that "wrapping" feeling.

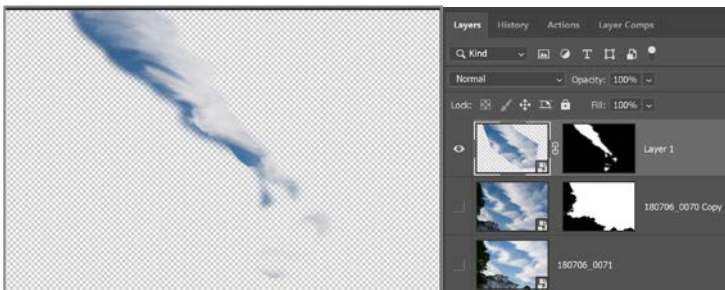
AOI: Wispy WrapPhotoshop for Photographers:  
Masking

Opened capture with the correct house size as a Smart Object (*processed in Camera-Raw*)  
 > **Smart Object**



Opened capture with the desired cloud structure as a Smart Object (*processed in Camera-Raw*).  
 - Created mask of house and trees then inverted to create mask for clouds.  
 - Scaled and rotated just the clouds several times (non-destructive) and moved them closer to the house to create the desired “wrapping” effect.

> **Smart Object; Selection Tools; Masking; Transform**



- Cloned left-front edge of the cloud layer (*New Layer via Copy*) to extend the clouds further left to close the gap in the blue sky.

> **Smart Object; Transform**

AOI: Cyanotype Friend

My photographer friend Bill Franzen is a pretty unique guy, he's still pondering *digital processing*. An excellent Black and White *film photographer*, *processor* and *printer*, he gives workshops on making cyanotype prints.

A group of enthusiastic photographers looked on as he demonstrated the cyanotype process. After the demo, Bill leads the group on a photo shoot. Well, this *unique* guy went to get his *unique* camera – a classic wooden beauty 4 X 5 view-camera.

Documenting the workshop for Bill, I got a shot of him showing the group how you operate this classic camera. He loaded a 4x5 film holder, slide it behind the frosted focusing glass then released the shutter using a cable release - amazement abounded!



Viewing my captures in my “much too modern-day” camera raw processing software, I found this wonderful portrait of Bill. I thought it might be fun to do a little something as unique as Bill – and make a descriptive portrait.

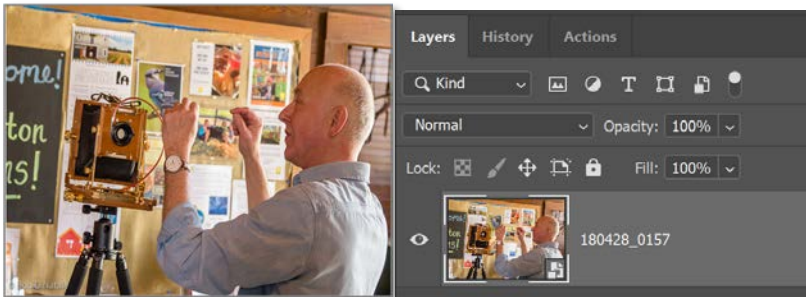
The Photographer's Task

Do a little something as *unique as Bill* - Maybe make a distinctive portrait and incorporate a unique element for my cyanotype friend.



AOI: Cyanotype Friend

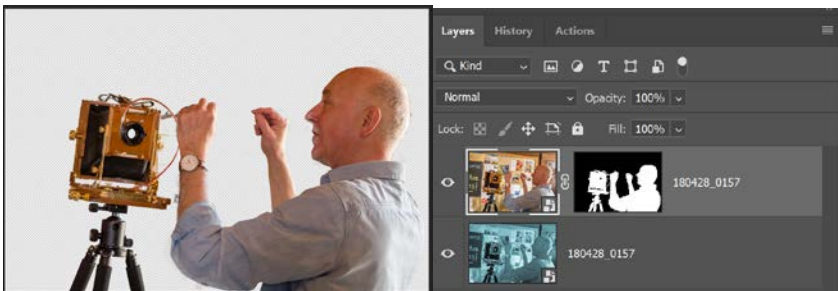
Photoshop for Photographers:  
P.I.E Non-Destructive Processing



Opened capture with the correct house size as a Smart Object (processed in Camera-Raw)  
> **Smart Object**



- Made a virtual copy in camera-raw and apply a cyanotype "Preset" (one master). then opened as a Smart Object.
  - Moved Cyan Layer below original photo layer.
- > **Smart Object, change "layer" order**



- Created a mask on the top layer to isolate Bill disclosing the cyan layer below.
- > **Selection; Layer Mask**

AOI: Fading Flock

Photographing in the Wakodahatchee Wetlands near Delray Beach Florida is a treat. All kinds of wildlife and vista abound – great photo opportunities.

The initial review of my shoot did not disappoint. However, I came across this photo “not-so- great” capture.



But... there was something intriguing about it. The hand, reaching out – almost as if calling the bird to come. It's not a *complete composition* but it had an interesting dynamic. I thought, if only there were more geese as in so many of my other photos.

I had just viewed a Photoshop video showing some new selection tools. I thought, maybe getting more birds might work – maybe a flock of geese from the “one” goose could be a good exercise.

The Photographer's Task

Build a flock of fading geese from the “one” goose - although fun and hopefully expressive, I knew this was not going to be quick!

I couldn't just clone & stamp the same bird shape...there needed to be some perspective change.

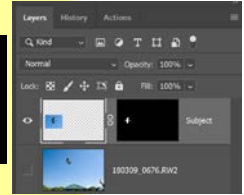
***When finished I was quite pleased... definitely a keeper.***

-



AOI: Fading Flock

Photoshop for Photographers:  
Photo Composite



1. Select the sole bird and cloned on a new layer

> **Clone new Layer Via Copy**

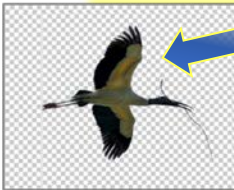
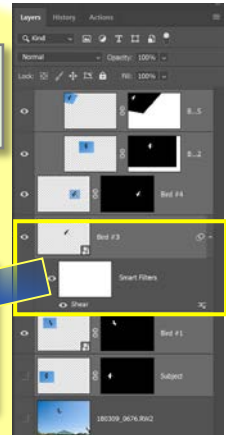
2. "Select Subject" - a PS's Artificial Intelligence (1-click)
3. Apply Artificial Intelligence mask.

> **Select; Select & Mask"**



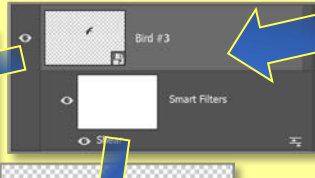
- Cloned and position 5 birds on separate layers

> **Clone**



- Smart Object

> **Smart Object**



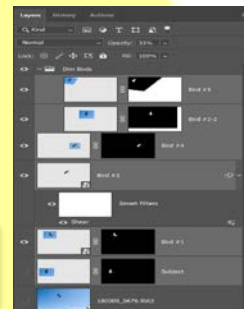
- Smart Object with "Shear" Filter to change bird's shape - (non-destructive)

> **Smart Filter**



- Set decreasing Layer's "Opacities" right to left.

> **Clone**



AOI: Daisy Ladies

What can be more tranquil than this scene – a field of daisies, two women talking on a bench, a crowd walking on a shoreline path, all the necessary elements.

I had nothing specific in mind, just getting good vibes and soaking in the sun shooting on a Tuesday afternoon. The serenity of this wonderful day started me hearing Spanky and *his* Gang's "Lazy Days" in my head.



When I got to reviewing my shoot, I was right – there were many nice feelings in this photo, but which was *THE feeling*? Where was the *serenity* I felt?



After trying many crops searching for *THE feeling*, I liked isolating the two women on the bench. Powerful? Expressive? Serene, my Artist's Expression?

Well close, BUT, the crowd, the walkers, the path, the rocky shoreline and the city in the background, the, the, the... *well, it's not too serene*. What I saw while photographing - all this activity, I now see as clutter.

The Photographers Task:

Maybe if I just remove the shoreline and the city; remove that path, the people, add more daisies - yea, that's the serenity I felt.

Digital manipulation... Creative enhancements... I like to think it is a visual expression, a realization of the artistic vision... *Just Do It!*



AOI: Daisey Ladies

Photoshop for Photographers:  
A Lot of Pixel Replacement



- Mat out Woman in the path – top left  
> **Clone/Stamp Tool**



- Add daisies behind Bench  
> **Clone/Stamp Tool**



- Mat the city & add daisies on the hill - Back Right  
> **Clone/Stamp Tool**



- Remove couple at top of path. When done, save the files with all the layers.  
> **Clone/Stamp Tool**



- I did the final crop in my camera-raw software.  
...Ah, “Serenity”  
(After saving the Photoshop file it should return to the raw software via the “handshake”)



### *Photoshop for Photographers*

As I said at the beginning of this section, you DO NOT need to learn all of Photoshop... probably only about 3% of it!

I demonstrated a few of Photoshop's photographers' tools. If we stay within our "photographic domain", there is a good possibility we won't get too overwhelmed. Below is a list of all the tools.

When you think you're ready, copy the tool from the list and "Google-it! You'll get many hits and many video tutorials. I tend to triangulate - I watch 2 or 3 videos then try applying the technique. Don't spend all your time looking at every video... we are not librarians... *we are photographers!*

*Too many people on the internet masquerade as instructors.* Be careful, after all, it is the internet. Stick with quality instructors. There are some quality people sharing solid information: Julianne Kost; Andrew Rodney; Matt Kloskowski; *The Lightroom Queen* - Victoria Bampton just to name a few.

### Essential Photoshop Tools

Below is a list of Essential Photoshop Tools a Photographer needs to know.

#### **Basic**

- Pixel Replacement
  - Resize: Image/Canvas
  - Copy pixels to new layer
- Layer
  - Pixel layer vs. Smart Object Layer
  - change "layer" order
  - Layer Mask
  - Layer Opacity
  - Clone new Layer Via Copy
- Selection
- Transform
- Clone/Stamp tool;
  - Current and Below
- Masking

#### **Advanced**

- Content Aware– Fill; Scale
- Masking
- Selection Tools
  - Refine Masks:
- Smart Object
- Filters:
  - Smart Filter
- Plug-ins



For a more in-depth discussion of each tool, see Appendix F:  
["The Photographer's Essential Photoshop Tools"](#)





*From above it is not bright, From below it is not dark.  
Dimly visible, it cannot be named.*

*This is called the image that has no shape,  
...the image without form.*

*Tao / Chapter XIV*

# The Wrap

## THE 4-Phases Workflow: Processing the Digital Image

What follows is the signature image of this writing, the [Key Bikes]. I will take you through the entire 4 Phases PhotoCycle™ workflow. There is a brief discussion about capturing this image as it effects the 4-phases processing workflow. Accompanying this complete workflow are examples at each Phase.

### “Key Bikes” Observations:

*What I saw* on the street was not what I captured in the camera. I saw a recently painted yellow clapboard house in Key West Florida with a couple of bikes parked in front of the wall.

*What I felt* was this warm colorful Floridian scene, on a warm & humid Floridian day – I was envying those bikes in the shade.

Being my 1st visit to Key West, this was the kind of scene that I imagined many times prior to ever visiting there.



### [ Sidebar]: The Backstory

Standing in front of the scene, I “Felt” the Florida Keys yellow, the bikes at rest in the peaceful cool “shade”. I never noticed the grate on the wall or the bike’s reflectors and partial seat on the left edge of the photo.

I saw these only after working closely with the photo during the first few phases of processing. The grate was annoying – *it had to be removed!* I wasn’t sure, and still am not 8 years later, if I want to show or remove the reflector and bicycle seat. *Ah, the benefits of non-destructive processing!*

### 0-Capture:

- The captured exposure was +2 stops over camera’s meter reading. My intent here was not to get the “final” exposure in the camera but to capture optimum scene data.
- No captured data of the scene exceeded the right side (highlights) of the histogram.
- The capture was a 12-bit Raw file
- 

### [ Sidebar]: “Brightness” of the Capture

Predictably, the capture was not as “bright” as a +2EV exposure. This under-exposure is consistent with “subject failure” when metering bright subjects.



1-Convert:

I imported the file from my camera card to my processing software – *converting the digits to dots*. On this *conversion*, the software applied my *Default Develop Settings* - including my *camera-specific color profile*. These basic *default* processes are applied to each capture on import.

2-Global:

My first global step is to *always apply* an “AutoTone” adjustment.

I then made additional global adjustments to balance tonal relationship in the photo – *as best as possible...* to produce a good general exposure:

- white balance - Slight warming
- Exposure ↑ *about + 1 stop*
- Shadows ↓

[ Sidebar]: Always Applying “AutoTone”

“AutoTone” can be added to your *defaults* and be applied during Phase 1-Convert



3-Selective:

Selective Adjustments made:

- Added yellow to just the clapboard – back to the *Floridian-Keys-yellow* I “felt”
- Green Shutters
  - Target Adjustment Tool: HSL = lighter/greener
  - opened the shadows showing more shutter detail
- Bikes
  - Brush: + Shadows... lightened shadows around the bikes’ wheels showing more detail
- Tree:
  - Brush: + Exposure; +Shadow; - Contrast; + Clarity
- General: Photo Vignette
  - Radial Gradient - shaped a vignette around the shadows of the tree to “reach-up” with the light.



*As you’ll notice, similar areas in this phase were adjusted during “Global” phase. Some of these “common areas” have adjustments increasing the effect while others were counter to those adjustments... Such is the nature of the tonal adjustment “tango” \**



[ Sidebar]: \* The “Five-Step” Tango

I first heard this “Tango” reference in a lecture by Jack Davis – “The Five Step Tango”. I found it very descriptive of the “back & forth” adjustments when processing the digital image.

[\[Click Here to view a snippet from this wonderful teacher\]](#)



4-Expressive:

During this expressive phase, I really try to connect with the image. Some things are more obvious than others, like:

- removing the grate,
- the reflector and
- a knot in the wood 3 boards down from the grate

All easy Photoshop for *Photographers* techniques.

Then, back to camera raw for more expressive tweaks:

- I revisited the Green Shutters to slightly lighten the green and open the shadows
- I revisited the Yellow Wall, vignetted top edges and tapered the brightness darker from top to middle.

What's Next? Thinking about darkening Shutter openings to hide the figure within... *still pondering if I want to return the seat for the front bike.*

*Ah, the benefits of non-destructive processing!*




---

### The 4-Phases Larger for Evaluation

**1 - Convert**



**2 - Global**



Pre-Visualization (a little) / Post-Visualization (a lot)

Let's review the PhotoCycle™ / 4-Phases of processing the "Key Bikes" example.

*Pre-Visualized* .....

During the *moment of capture* – there was a definite awareness. I "Felt" the Key West scene that was dormant in my mind – the temperature and humidity; the color; the palm trees; etc.

My *craft to capture the optimum exposure* was in place. Move on to capture more scenes – maintain that photographic awareness - recall or reshape the purpose of capture later.

Phase: 1-Converting my "captures" were pre-set with my defaults in my computer software months/years earlier.

*Post-Visualized (Continuing with the 4-Phases)* .....

2-Global – "AutoTone" and adjustments *to the tonal range of the scene*;

3-Selective... focus, not on the tonal range of the scene but, on *the tonal relationship of the subjects in the scene*: the yellow wall; the shutters; etc.

4-Expressive... the Photoshop work, revisiting Lightroom for subtle tonal changes on the shutters, the wall gradient shading, top edges of the photo.

*Am I "recalling" or "reshaping" my memory - it doesn't really matter?  
This is all Pre-Visualization... I am creating my Artistic Expression of the scene.*

---

The 4-Phases Larger for Evaluation

**3 - Selective**



**4 - Expressive**



## Artistic Expression Is A Process

*Artistic Expression...Ansel Adams calls it the “Expressive Photograph”*

*Chita Rivera “liberates from the technical leading  
her to freedom of expression”*



Achieving artistic expression is a process. I truly believe when processing your digital image following the PhotoCycle™ 4-Phases workflow will lead to *your expressive photograph*.

The first 3 phases of the digital process will not only enhance the captured data, but you'll become close with your images. Some may fall short of your vision... some may be inspiring – the first 3 phases are where this will emerge. It is not boring or rote... it is a *clearing-away*, a way to see the potential of your captured images.

In film/analog photography, there was much “Pre-Visualization” ... this was necessary - the medium was heavily driven by its craft. In digital photography our goal is to initially capture that gesture, the perspective, *the optimum digital exposure*... and then to *optimally process that captured data*!

The number of tools we'll need to modify, enhance and express will vary for each image. The tools we will use cannot be predicted at image capture, or even when reviewing our thumbnails. As we understand our craft, we'll be liberated from the tools to have *our freedom of expression*.

Digital capture is not like cinéma vérité, capturing footage and then finding it on the splicing table. It is more like an idea with endless options to express what we felt when capturing our image.

The digital processing tools are limited only by our imagination... our ability to pull the *art from the stone* is the Post-Visualizing to find our “Artistic Expression”.



## Inspiration

Here is an uplifting quote by Imogene Cunningham...



*"Which of my photographs is my favorite?  
The one I'm going to take tomorrow."*

*Imogen Cunningham*

Also, when I look for inspiration, I revisit this interview with Jay Maisel often.

I urge you to watch this short video

[Jay Maisel's Light, Gesture & Color](#)

*Onward!*





# V

## Appendix



- A. [Book Links](#)
- B. [Book's Website](#)
- C. [Submitting Your Photos](#)
- D. [Setting Develop Defaults](#)
- E. [Calibrating Your Camera](#)
- F. [Essential Photoshop Tools](#)
- G. [PDF Printing Instructions](#)

## A. Processing the Digital Image “Book Links”

### Book Links by Chapter - For non-PDFBook Reader\*s

#### Introduction

1st Digital Camera: [http://en.wikipedia.org/wiki/Kodak\\_DCS\\_100](http://en.wikipedia.org/wiki/Kodak_DCS_100)

Adobe Camera Raw History: [www.lynda.com/Lightroom-tutorials/short-history-Adobe-Camera-Raw-ACR/185329/412684-4.html](http://www.lynda.com/Lightroom-tutorials/short-history-Adobe-Camera-Raw-ACR/185329/412684-4.html)

Compare Raw Processing - 2005 vs. 2019: [www.processingthedigitalimage.com/bookphotos\\_intro/](http://www.processingthedigitalimage.com/bookphotos_intro/)

#### 1 Basics of PDI

Section I Photos: [www.processingthedigitalimage.com/basic1/](http://www.processingthedigitalimage.com/basic1/)

# Digital Image Shot/Year: <https://mylio.com/true-stories/tech-today/heres-how-many-digital-photos-will-be-taken-in-2017-repost-oct>

Best PHONtography Editing Apps <https://iphonephotographyschool.com/best-photoshop-app/>

More Camera-Phone Hardware Attachments

<https://www.engadget.com/2018/06/07/best-smartphone-camera-accessories/>

#### 3 More Basics of PDI

Section III Photos: [www.processingthedigitalimage.com/bookphotos\\_basic2/](http://www.processingthedigitalimage.com/bookphotos_basic2/)

#### 4-Phases

1-Convert: [www.processingthedigitalimage.com/bookphotos\\_4p\\_1convert/](http://www.processingthedigitalimage.com/bookphotos_4p_1convert/)

2-Global: [www.processingthedigitalimage.com/bookphotos\\_4p\\_2global/](http://www.processingthedigitalimage.com/bookphotos_4p_2global/)

3-Selective: [www.processingthedigitalimage.com/bookphotos\\_4p\\_3selective/](http://www.processingthedigitalimage.com/bookphotos_4p_3selective/)

4-Expressive: [www.processingthedigitalimage.com/4p\\_4expressive/](http://www.processingthedigitalimage.com/4p_4expressive/)

4-Photoshop Examples: [www.processingthedigitalimage.com/bookphotos\\_4p\\_4expressive-psp/](http://www.processingthedigitalimage.com/bookphotos_4p_4expressive-psp/)

4- Content Aware: <https://creativepro.com/which-photoshop-content-aware-feature-should-you-use/>

#### Digital Processing: More Links:

- Digital Image Processing [\[Click Here\]](#)  
[https://en.wikipedia.org/wiki/Digital\\_image\\_processing](https://en.wikipedia.org/wiki/Digital_image_processing)
- Adaptive technology [\[Click Here\]](#)  
<https://actcenter.missouri.edu/about-the-act-center/what-is-adaptive-technology/>
- Computational Photography [\[Click Here\]](#)  
[https://en.wikipedia.org/wiki/Computational\\_photography](https://en.wikipedia.org/wiki/Computational_photography)  
*refers to the use of digital computation instead of optical processes.*
- Epsilon Photography [\[Click Here\]](#) [https://en.wikipedia.org/wiki/Epsilon\\_photography](https://en.wikipedia.org/wiki/Epsilon_photography)  
*a form of computational photography where multiple images are captured with slightly varying parameters (represented by  $\epsilon$ )*
- Light Field [\[Click Here\]](#) [https://en.wikipedia.org/wiki/Light\\_field](https://en.wikipedia.org/wiki/Light_field)
- The Plenoptic Function [\[Click Here\]](#)  
[http://homepages.inf.ed.ac.uk/rbf/CVonline/LOCAL\\_COPIES/ASHBROOK1/node4.html](http://homepages.inf.ed.ac.uk/rbf/CVonline/LOCAL_COPIES/ASHBROOK1/node4.html)  
*the 5-dimensional function representing the intensity/chromaticity of light observed from every position and direction in 3-D space.*
- Digital Sensors link [\[Click Here\]](#)

Note: I have referenced these sites but do not control them. From time to time the links may not work... if you find such a link please let me know and I will fix it



**Processing the Digital Image “Book Links” (Continued)****Essential Links:**

*If you are serious about understanding digital photography, ...these links are a must!*

**Exposure:**

1. Bruce Fraser's Two Definitive White Papers On Digital Exposure
  - o **Raw Capture, Linear Gamma, and Exposure** [\[Click Here\]](#)  
[www.bobdinatale.com/files/BF\\_Raw%20Capture%20C%20Linear%20Gamma%20and%20Exposure.pdf](http://www.bobdinatale.com/files/BF_Raw%20Capture%20C%20Linear%20Gamma%20and%20Exposure.pdf)
  - o **Understanding Digital Raw Capture** [\[Click Here\]](#)  
[http://www.bobdinatale.com/files/BF\\_Understanding\\_DigitalRawCapture.pdf](http://www.bobdinatale.com/files/BF_Understanding_DigitalRawCapture.pdf)  
 They are only 4 pages each but will provide the basis for understanding digital exposures and enable you to get the most out this book.
2. Exposure to the Right – the Genesis  
 Michael Reichmann is credited as being the father of Exposure to the Right [ETTR]. Here are two of his articles: the first in 2003 and an update in 2011.
  - o 2003 [\[Click Here\]](#) <http://www.luminous-landscape.com/tutorials/expose-right.shtml>
  - o 2011 [\[Click Here\]](#) [http://www.luminous-landscape.com/tutorials/optimizing\\_exposure.shtml](http://www.luminous-landscape.com/tutorials/optimizing_exposure.shtml)

**Informational:**

**Todd & Zakia** - Photographic Sensitometry: The Study of Tone Reproduction

<https://www.abebooks.com/servlet/BookDetailsPL?bi=30079275198>

**Tone Reproduction Cycle** - Franklin Institute Journal, Vol.190 – Page 50;

<http://books.google.com/books?id=t-UGAAAYAAJ&pg=PA39&dq=photography+tone-reproduction&hl=en#v=onepage&q=photography%20tone-reproduction&f=false>

**George Jardine "Revisiting the Zone System"** [\[Click Here\]](#)

... a must if you want to understand Digital Exposure <http://mulita.com/blog/?p=3358>

**The Pencil of Nature** "Fox Talbot's book" with RFD notes [\[Click Here\]](#)

[www.processingthedigitalimage.com/wp-content/uploads/The%20Pencil%20of%20Nature\\_RFD.pdf](http://www.processingthedigitalimage.com/wp-content/uploads/The%20Pencil%20of%20Nature_RFD.pdf)

the first commercially published book illustrated with photographs. It was wholly executed by the new art of Photogenic Drawing, without any aid whatever from the artist's pencil!

**Camera Profiling:** [\[Click Here\]](#)

<https://www.dpbestflow.org/color/camera-profiling>

**Inspirational**

**Cartier-Bresson Washington Post Interview (8/5/2004)** [\[Click Here\]](#)

- <http://www.washingtonpost.com/wp-dyn/articles/A39981-2004Aug4.html>

**Cartier-Bresson "The Decisive Moment"** [\[Click Here\]](#)

- <http://www.photohype.com/DecisiveMoment.htm>

**Jay Maisel Light, Gesture & Color – 8-minute inspiring video** [\[Click Here\]](#)

- <https://youtu.be/GzQUUp02XfAM>

**The Art of Photography** by Karl Lang [\[Click Here\]](#)

Karl Lang explains the importance of understanding the digital craft necessary to support the Artist's Vision. A must read.

[http://www.lumita.com/site\\_media/work/whitepapers/files/pscs3\\_rendering\\_image.pdf](http://www.lumita.com/site_media/work/whitepapers/files/pscs3_rendering_image.pdf)

Note: If you purchased the printed version and would like a PDF version of the book, please contact me and I will send you a 50% discounted coupon.

**B. Website: Processing the Digital Image - 4-Phases**

*This book has a complementing website  
Please check periodically for updates and new downloads*

**Pages:**

**"Home"** [www.ProcessingTheDigitalImage.com/](http://www.ProcessingTheDigitalImage.com/)

*From the home page menu, you will find links to all other site locations...*

- "Purchase the Book in all formats [[Click Here](#)]"

**"Digital Processing Examples"** [www.processingthedigitalimage.com/support/](http://www.processingthedigitalimage.com/support/)

*From the home page menu, under "Book Photos"*

**"Train With Bob"** [www.processingthedigitalimage.com/training/](http://www.processingthedigitalimage.com/training/)

- Schedule Time with Bob for Personal 1-on1 Online-Training

**"Bob's Blog"** <http://bobd.tv/>

- Post your Questions & Comments on the Processing the Digital Image

## C. Submitting Your Photos

### Submit Photos

You are invited to submit your photos using the *4 Phase Workflow* on the book's website. You'll find these submitted photos under "Book Photos" Menu "Submitted Photo" menu.

If you would like to submit photos for the PDI website, please fill this form and email it with your photo. (*See the Sample Below*)

You can also go to the website's "Submit Photo" page and fill the form there  
[www.processingthedigitalimage.com/submit\\_photos/](http://www.processingthedigitalimage.com/submit_photos/)



Submit Two Photos:

- Phase-1 Convert before any processing & the final processed Image
- Discuss other Phases 4 processing workflow.

Phase-1



Final Image



### Processing Tools/4-Phases Workflow

- Global: Lowered contrast; raise black point to enhance fog
- Selective: "spot healing" brush to move plane left for better composition; brush" to desaturate, lower contrast and add haze to plane; "radial gradient" vignette to light and lower edged contrast
- Expressive: "brush" to desaturate, lower contrast and add haze to plane; "radial gradient" vignette to lighten and lower edged contrast

### Personal Info:

Your Name: \_\_\_\_\_ World Location \_\_\_\_\_

*Would you be willing to be part of a Live Online AOI to discuss this photo with other readers? Yes\_\_\_ No\_\_\_*

Email To: [email@BobDiNatale.com](mailto:email@BobDiNatale.com)

Subject: "Photo Submission for Consideration to PDI Site"

## D. Setting Software Develop Defaults

### Setting Software Develop Defaults

Adobe Lightroom allows you to set “Default Develop Setting” specific to your camera’s model and serial number. When adding files, Lightroom will identify the camera and apply the appropriate “Default Develop Settings” - if the card had been used in multiple cameras! (*see sidebar below*) You can also save a “custom camera profile” to your settings. (*see Appendix E.*)

### What Settings to use for your Develop Defaults?

- You DO NOT want to save specific “Tone” (Exposure, Contrast, Shadows, etc. as these would be unique for each image.
- You want to be discreet here... just use those settings that you would want to apply to every image. (*see my defaults below*)

### How to Set your Camera’s Default Develop Setting?

In Lightroom’s Develop” module:

1. Select a “camera raw” image, right click and “Create Virtual Copy”
2. Restore the “Virtual Copy” to “Adobe Defaults Settings” by pressing the “Reset” button.
3. From the “Develop” menu choose “Set Default Settings”
4. Holding down the “Alt/Option” key changes the “Reset” button to “Set Defaults...” then click the “Restore Adobe Default Settings” button
5. Apply your desired settings to the image: ([see my defaults earlier in book](#))
6. Set Your Camera’s “Defaults Develop Settings” for this specific camera:
  - a) Again, hold down the “Alt/Option” key to change the “Reset” button to “Set Defaults...”, now and select “Update to Current Settings” button – that’s it! (*If you have multiple cameras, set defaults for each\**).



### [Setting Multiple Camera Defaults]

You will need to change the Lightroom Preferences, “Presets” tab to select “Make defaults specific to camera serial number”. (You can also set for specific ISOs but that can be more problematic than helpful – your defaults will only be applied if the file ISO matches the default ISO.

## E. Calibrating Your Camera

Enough can't be said about the need for calibrating your camera. Each camera sensor has its own personality and sees color differently... even from the same manufacturer and the same model! Calibrating your camera will take full advantage of your camera's color and tonality when processing your camera raw images.

### Camera Calibration:

Using X-rite's Passport ColorChecker, you can create a **camera specific profile** in Lightroom for your "Camera Calibration" setting. This profile will remove each camera's unique color bias and increase the repeatability of colors between multiple "Calibrated" cameras.

Adobe Camera Raw supports (and X-rite creates) "dual-illuminant" profiles (Daylight/Tungsten). This will produce more faithful colors across a wider color illumination range. You can create a LR Develop preset to apply just your "Camera Specific Calibration" to shots taken with that camera only at any later time!



## F. The Photographer's Essential Photoshop Tools

The power of Camera-Raw software and photo Plug-ins has changed the way we process our digital images. However, Photoshop remains an important tool for the photographer. Here are the essential Photoshop tools the photographer needs to know.

### Overview

- Layer Basics:
  - o Learn the Different types of layers and how to - Create; Duplicate; Scale & Transform; Mask, Add Effects and Clip Layers
- Pixel Replacement:
  - o removing unwanted elements from your photos... which technique to use and when
    - Clone Stamp; Copy/Cover/Reveal; Layer Via Copy
    - Content Aware **Fill, Patch, Move**
- Plug-ins
  - o Make sure the work with Photoshop "Smart Objects"



### Tools

#### Layers

Types: Pixel; & Adjustment Mat cover

- Pixel
  - o "Background" layer unique "Bottom" of stack
  - o Smart Objects: non-destructive (parametric)
- Adjustment (non-destructive)
  - Menu: Layer>New Adjustment Layer
  - Layer Palette [New Adjustment Layer] icon:

#### Working with Layers:

- Making New layer:
  - o *from* Menu: Layer>New>"Layer..."
  - o *from* Layer Palette [Create a new layer] icon

#### Working with Layer "Mask"

- Creating Masks: **B**lack **B**locks; **W**hite is **W**indow
  - o No Selection:
    - Menu: Layer>Layer Mask: Reveal / Hide "All"
    - Layer Palette [Add layer mask] icon: click=Reveal / Alt+click = Hide
  - o With Selections
    - Menu: Layer>Layer Mask: Reveal / Hide "Selection"
    - Layer Palette: [Add layer mask] icon click Reveal "Selection" / Alt+click Hide "Selection"

*The Photographer's Essential Photoshop Tools (Continued)***Selection** - *It is ALL about Selections!*

- **Quick Selection**
- **Magic Wand** :Lasso: polygonal; magnetic lasso

**Pixel Replacement** – *this IS Photoshopping!* - remove stop sign, ex-brother-in-law, etc. Which technique to use... and when

- **The Clone Stamp Tool** [small areas]
  - o Tricks and Tips:
    - Clone on “blank” layer;
    - Change Clone Stamp tool blend “Mode” to Lighten / Darken
- **Copy/Cover/Reveal** [large areas]
  - o **Copy** –a selected area... Menu: Layer>New>Layer via Copy
  - o **Cover**
    - Move [V] copied “tile” over area to “Cover”
  - o **Reveal**
    - White Brush on mask
      - **Black Blocks; White is Window**
  - o **Transform [Ctrl/Cmd T]**
    - Proportional / Non-proportional (distort); Rotate
    - Pixels / Mask effects Both when locked; effect Either by unlocking mask
- **Refine Masks:**
  - Basic.....
  - o With Brush... **Black Blocks; White is Window**
    - Soft/Hard Edge; Keyboard [X] flips Fore/Background colors; [D] sets default colors)
  - o “Blur” tool: brush/rub edges of “mask” to soften mask edges
  - o Filters:
    - Blur; Blur More; [Ctrl F; Ctrl F]; History; Ctrl+Z
    - Gaussian Blur
  - Advanced.....
  - o Refine Edge command [[J.Kost Video Click Here](https://youtu.be/H5vT0lyKSTg)] <https://youtu.be/H5vT0lyKSTg>



## The Photographer's Essential Photoshop Tools (Continued)

### **Content Aware**

All Photoshop's *Content-Aware* tools use Artificial Intelligence to replace pixels on pixel layers.

- **Content-Aware Fill**
  - o Select the area you want to remove
  - o from the Edit menu, select: Fill >Content Aware
    - this tool will find pixels like those in the area you selected and replace the unwanted pixel. The selected pixels will be blended into the scene
- **Content-Aware Scale**
  - o Allows non-proportional scaling (change the aspect ratio) without "distorting" any important elements in the image!
  - o It scales areas with similar pixels while it does not-scale dissimilar pixels. "Scale" has a setting where you can manually select specific areas you want protected.
- **Content-Aware Move**
  - With this tool, you "*move an object*" in the photograph to another area. Photoshop will try to "fill" the vacated area based on the image content.
- **Content-Aware Patch** (*the reverse of "Move"*)
  - With this tool, you "*move an area*" in the photograph to cover an *area*. Photoshop will try to "Patch" the object with the moved area.
    - Replaces an area using a pattern or pixels from another part of the image.

### **Plug-ins** (*Photoshop's "Filters" Menu are their Plug-ins*)

*Filters apply an effect without needing to know the many sophisticated steps to create the same effect.*

- Photoshop's "Filters" Menu are their Plug-ins
- Photoshop's "Filter Gallery" allows to combine many filters. You can create and save your personal unique effect
  - o Used on a "Smart Object", filters become "Smart Filters" which are non-destructive and re-editable
- 3rd Party Plug-ins
  - o Should preferably supports "Smart Object's to maintain a non-destructive and re- editable workflow!!

## **G. Instructions for Printing this PDF Book**

*The PDF version of this book is “printable”. The page size of the book is 8 ½ x 5 ½.*

If you have a printer capable of printing on both sides of the paper, printing in “booklet” form It is quite easy using standard “Letter” size paper.

Then, using Adobe Acrobat Reader 10.0 or higher:

Under the “File” menu:

1. Select “Print” (choose printer and set “Letter” size paper.
  - a. Pages to Print: All
  - b. “Page Sizing & Handling” menu, choose “Booklet”
    - “Sheets from: will tell the # of sheets of paper you’ll need
2. Orientation: Portrait
3. Click the “Print” button to start printing



You should be able to fit the entire book on approximately 30 sheets of paper. When done, simply fold in full letter size paper in half... *and find a stapler with long staples!*





# Compendium



## Mobile Photography

# Mobile Photography

## PHONtography and Photo Adjustments

As I mentioned in the intro, Mobile Photography has an important place in today's Digital Photography. This section discusses the PhotoCycle™ and the 4-Phases of digitally processing your mobile photography.

### The Camera-Phone Workflow

Again, it is important to restate that *you don't process every photo you shoot*. It's similar to shooting with a DSLR or a point-and-shoot camera. You review your images, then you process just the "Selects".

A good time to process your "select" photos is just before you are about to share your photo – *Facebook; Instagram; emailing* etc.. If you want to be known as a good photographer, remember...

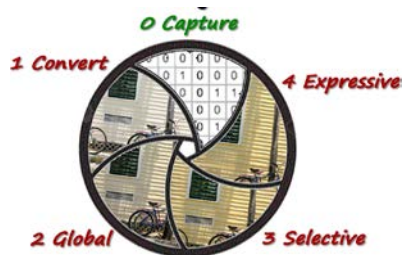
*"A photographer is known by what they show – not what they shoot"*

### Phase 0: Capture

- First and foremost - clean the lens. This phone has been in pockets; purses; jeans and grabbed with no awareness if your fingertips are touching the lens!
- Steady your camera-phone. Lean against a building; burry you elbows in your ribs and press the camera-phone against your forehead. (*a.k.a. "a tripod"*)

### Phase 1: Convert

- Phone Capture Settings:
  - If your phone supports it, capture in camera raw (DNG). The reasons for not using a JPG format is even more exaggerated in mobile photography.
  - set your camera-phone "capture defaults" set "in-the-ready" prior to shooting. Priority of settings:
    - Camera Raw (DNG) – *if available, if not HDR*
    - slight overexposure: +.3 EV bias



[ Sidebar]: Send to Desktop Software

**If you are using Adobe "Photographer's Subscription" ...you can stop here!**

Your files will be transferred from your mobile device back to your home PC waiting to be processed with your full-blown raw processing software.

Phase 2: Global [Phone Processing Software]

- Crop: helps focus viewer on your subject; consider a way to tell your story
  - Auto Tone (Magic Wand): moderates highlights; shadows; tonal relationships
  - Brightness/Exposure Adjustment:
    - AutoTone balances tonal relationships and the “Blacks” & “Whites” points” ... but many times a slight + or - brightness adjustment is needed ...Share processed photo to Facebook; Instagram; email; etc.
- << That’s it - simple, fun and respecting the viewer of your photograph! >>

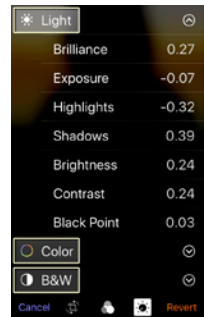
[ Sidebar]: Send to Desktop Software

**Again, if you have Adobe Photographer’s subscription... you can stop here!**  
The “Quick-Phone-Processing” will be on your home PC to be further processed on a large screen with your raw processing software.

Phase 3: Selective [Phone Processing Software]

Most camera-phones have advanced editing software features to address selective areas of your photograph. Using sliders and masking for exposure; highlights; shadows; contrast; blacks; etc.

Controlling the sliders on the small screen and the bright environment (outside) is not conducive to make fine adjustments. *However, I do reach for these controls to fix something egregious in a capture I am about to share.*

3<sup>rd</sup>-Party software

There are many 3<sup>rd</sup>-party software apps for camera-phones that extend the mobile-processing experience:

- some have very advanced processing features;
- some allow you to capture photos in camera-raw (DNG)...
- *many are free!*

The most friendly and powerful camera-phone app that fully supports my PhotoCycle™ and the 4-Phases of processing is Adobe’s Lightroom Mobile:

- it captures Raw (DNG);
- supports “Non-destructive” editing,
- and handshakes easily with Photoshop.

More apps and hardware for camera-phones are discussed following the “Quick-Mobile-Process” workflow example.

### THE 4-Phases: *Mobile-Processing the Digital Image*

Before *sharing* your photo, be attentive... here is where you can show respect for the viewer's time looking at your photo. I think it is a good time to recall Jay Maisel's quote: "*You are responsible for every part of the photo... even the parts you're not interested in*".

What follows is a typical "quick minimal-process" for each photo you want to share.

I will take you through the entire 4 Phases PhotoCycle™ workflow. There is a brief discussion about capturing this image as it effects the 4-phases processing workflow.

### Minimal "Quick-Process" Before Sharing Your Camera-Phone Photos

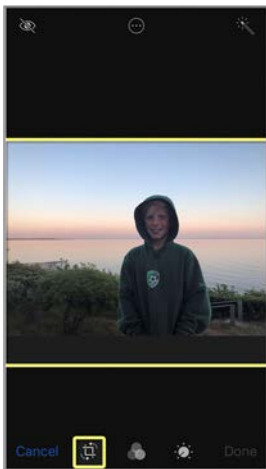
iPhone Moment of Capture



iPhone Artist's Vision



### Phases 0-Capture & 1-Convert



#### Phase\_0: Capture

- clean the lens prior to shooting
- Steady your camera-phone.

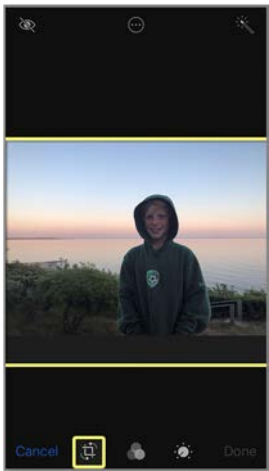
#### Phase\_1: Convert

- Camera Default Capture Settings:
  - Camera Raw (DNG) – *if available, if not HDR*
  - slight overexposure: +.3 EV bias



Phase-2 Global

PRE-Crop



POST-Crop



Crop:

- *helps focus viewer on your subject; consider cropping a way to tell your story*

Magic Wand - BEFORE



Magic Wand - AFTER



Brightness Adjustment



AutoTone (Magic Wand):

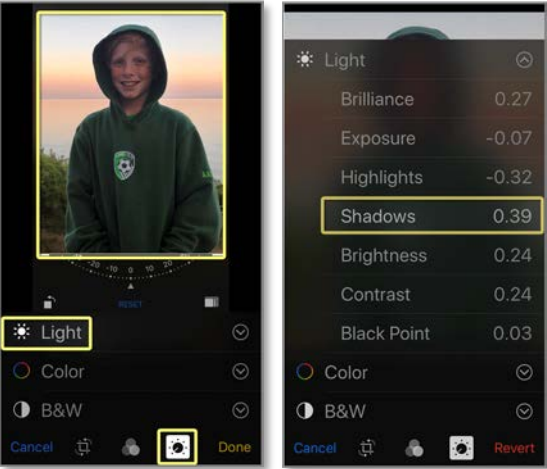
- *moderates highlights; shadows; tonal relationships*

Brightness/ Exposure Adjustment:

- *Adjust Brightness as needed*

Phase3 Selective

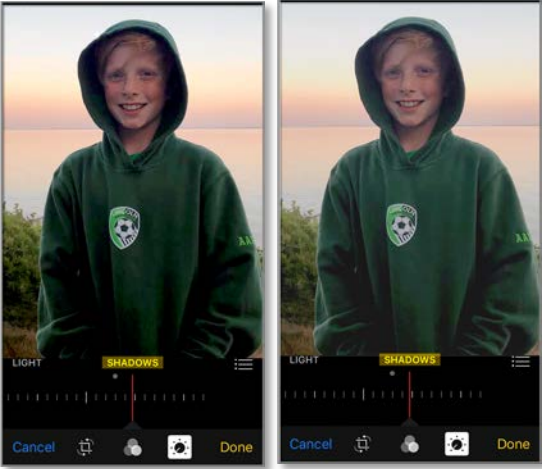
3- Selective Adjustments    3- Selective SHADOWS



Advanced Editing Menu  
Shadows:

- *For selective editing*

Shadows - BEFORE    Shadows - AFTER



Shadows:

- *Use "Shadow" slider to raise dark shadows without effecting highlight areas*

There are many apps and hardware attachments that will assist your Mobile-Photography digital image processing... most *Apps* are free. *Hardware* can also expand your *Moment of Capture* photography options.

Of the many to choose from, the most productive for me is Lightroom Mobile. It has most all digital processing features of the desktop version – and, it’s free. If you have Adobe’s “Photographer’s Subscription” you can upload your camera-phone’s raw (DNG) captures to your desktop for further non-destructive processing.

- Adobe Lightroom Mobile App - Free
  - Lightroom Mobile Adobe
    - 1-Capture Raw (DNG) and HDR file format
    - Supports All 4 Phases PIE Non-destructive editing
    - Uploads my camera-phone raw captures to my home desktop
- Google's "Snapseed": a complete and professional photo editor
  - a powerful photo editing app - has all the basic photo editing software plus many advanced features. All edits are non-destructive
- **Other Adobe Free Mobile Apps**
  - **Express**: a free mobile app for making quick, powerful, and easy photo edits and creating collages.
  - **Fix**: enables powerful easy image retouching and restoration. Features heal, smooth, liquify, lighten; etc.
  - **Mix**: offers Photoshop's layers and advanced tools... remove objects from our photos, combine multiple images, work with different layers.
  - **645 PRO**: turns your Camera-Phone into a fully working manual camera!



Camera-Phone [Hardware]

- Dr. Russell Brown - Mobile Processing Master Hardware Links:
  - Mobile Phone Pocket Tripod: [\[Click Here\]](#)
    - The L-Clamp Phone Clamp: [\[Click Here\]](#)
    - The Micro Ball Head: [\[Click Here\]](#)
  - Aerial Photography: (Best travel copter)The Mavic 2 [\[Click Here\]](#)
  - Best 360 Degree Camera - Ricoh Theta Z1: (works w/Lightroom) [\[Click Here\]](#)
  - Best Camera Phone for night photography: Huawei P30 Pro: [\[Click Here\]](#)
- More Camera-Phone hardware attachments [\[Click Here\]](#)

My Limitations to Camera-Phones

I don't do a lot of camera-phone photography because of the limitations of interchangeable lenses. I am very aware of "perspective"- the relationship between object in my photo.

By changing my camera position to alter the relationship of objects in my photograph, I then fill the view finder with different focal length lenses on my DSLR camera.

This is very different than "pinch-zoom" with your Camera-Phone. "Pinch-zoom" with most Camera-Phones does not "zoom-in" but crops the number of pixels your image will use. This results in less mega-pixels per capture and therefore less image quality.

Using you Smart-Phone as Your Prime Camera

If you want to really think of having your Camera-Phone as your prime camera, consider additional lenses from Moment Products. You can do quality telephoto, wide-angle and macro image captures. These quality, small profile lens makes for really light-weight traveling photo-gear [\[Click Here\]](#)

Moment Products <https://www.shopmoment.com/>

- Lenses: <https://www.shopmoment.com/shop/categories/lenses>
- Wide Angle: 18mm: .63mag <https://www.shopmoment.com/shop/wide-18-mm-lens>
- Telephoto: 58mm 2x/4x mag <https://www.shopmoment.com/shop/tele-58-mm-lens>
- Marco Visual: 10X mag <https://www.shopmoment.com/shop/macro-lens>

**Creating Collage**

- Open files to be included in the collage as "Smart Objects":
  - a. if files are already a pixel Layer... "Convert Layer to Smart Object" before "transforming"
- Copy each image into one open "Parent" document:
  - b. Set Photoshop Desktop to "Tile" mode
  - c. From the Layer Palette of each image, drag the Layer in to the "Parent" document.
- Set Canvas Size to Final Output Size:
  - d. Menu: Images >Canvas Size

*Note: Ignore Any Clipping Warnings*
- Arrange the Layers to Create Final Collage Layout
  - e. scale / re-scale / distort / rotate etc.
  - f. add Layer "Styles":
    - i. drop shadows/beveled edges/edge stroke/etc.
    - ii. Copy "Style" and "Paste" to all layers in the Collage for consistency
- Save
  - g. Reopen and continue to design and rearrange if necessary.

**Transform and move images as many times as you wish... all these adjustments are Non-Destructive !**

**Anatomy of an image (AOI)**

*RFD ...process for demonstrating the "4 Phases" of Digital Image Processing*

- Create 5 "Snapshots" from the final version naming them appropriately:
    - 0 Capture; 1 Import; 2 Global; 3 Selective; 4 Expressive
  - Adjust all but the last "Snapshot" accordingly:
    0. Select "Snapshot" #0 and apply LR Preset "AOI 1 Import"
      - a. remove any Adjustment Brush or Gradient Filter
      - b. then Update Snapshot 0 & 1
    1. Select "Snapshot" #1 and apply LR Preset "AOI 1 Import" then Update
    2. Select "Snapshot" #2 and apply LR Preset "AOI 2 Import"
      - a. remove any Adjustment Brush or Gradient Filter then "update"
    3. Select "Snapshot" #3 might remove some of the top "Expressive"
      - AB/GF are then update snapshot leaving difference for 4<sup>th</sup> Snapshot
- Note: if any additional "Expressive" fine-tuned adjustments are made you can always update "Snapshot" 4 or add snapshot 4a,b etc.

## Pixel Replacement

With Large Areas... use Copy/Cover/Reveal

1. Select "Tile" area to copy
2. Copy selected pixels to new layer
  - Menu: Layer>New>Layer Via Copy
  - From keyboard: [Ctrl/Cmd + J]
3. Move the "Tile" to cover the desired area
4. Add Black Mask To "Tile" layer
  - Menu: Layer >Layer Mask >click mask icon on the latest health Hide Selection
  - on Layers palette, [Alt/Option + click "Mask" icon]
5. Reveal pixels below by painting with a "white brush" on the mask
  - If you revealed too much the switch brush color to black to "block" pixel
  - for irregular edges, use the "Magnetic Lasso" then paint area with white brush
    - a. *repeat as needed for other areas*
6. Soften/Feather "Mask" Edge
  - When using the lasso tool you might want to soften edges
    - Filter: "Blur More"... repeat filter -- [Ctrl/Cmd + F]
    - use "Blur Tool" to alert edges of the mask

With Smaller Areas Use the "Clone Stamp Tool"

1. Create a new "Blank Layer"
  - a. Menu: Layer >New
  - b. on the Layers palette, click "New Layer" icon
2. Set "Clone Stamp Tool" To "Current And Below"
  - a. this adds "cloned pixels" to the blank layer
  - b. you can "mask" or "erase" these pixels without affecting the pixels below
  - c. Tip: you can also set the "clone stamp tool" "mode" to darker or lighter this will also moderate any repeating patterns





# Processing the Digital Image... *the 4 Phases*

**1 - Import**



**2 - Global**



**3 - Selective**



**4 - Expressive**



## **Who This Book is for:**

*"...the person who is serious about their photography".*

*"...the photo enthusiast who loves taking and showing their photographs."*

A serious photographer doesn't need to have a \$4000 camera - they need only enjoy showing their photographs as best they can. If you want somebody to spend time looking at your photos, then you owe it to that person to spend time with your photo before you show them.

We'll discuss a brief history on the evolution of processing photographs, where are we are today... but mostly we will talk about processing the digital image. This book will raise your awareness of tonal relationships and how to correct areas to better present your photos. Learn how to process those dark images of your family on a ski slope or beach, the dark figure standing in front of a bright window or better show your dog in a park with 100 others. A simple crop and autotone adjustment will help the viewer better see your photographic vision.

The "how tos" in this book are not software specific. Many software programs can achieve the techniques demonstrated in this book. The book has an accompanying website to support concepts and continued learning...

*"... this book will affect the way you process and present your photography."*

## **Bob DiNatale**



Bob has worked as a photographer, author, teacher and inventor for over 40 years, and currently conducts workshops, lectures and private instruction in the area of digital photography. His work at Polaroid R&D in silver emulsions along with his US patent in color printing gave Bob a broad base of expertise in film photography.

He presented his first digital media production in 1984, founded the Olympus School of Digital Photography in 1998 and has been an instructor at: Nikon School of Photography; Time-Life School of Photography; Boston University; and University of Massachusetts.

Bob's certifications include: Adobe Certified Expert Photoshop Lightroom; and X-Rite Coloratti. He has lectured for Adobe, the BioCommunications Association and Photographic Society of Madras, among many other conventions and programs.





# Processing the Digital Image

the  
4 PHASES

*Introducing Bob DiNatale's*  
**PhotoCycle™**