Black & White

Etobicoke Camera Club

by

Tony Paine
(www.tonypainephoto.com)

February 9, 2015

Promo!

Education of a Photographer

Promo!

Mississauga Camera Club

by

Tony Paine

(www.mississaugacameraclub.ca)

Thursday February 19, 2015 7:30 pm

Black & White Outline

- AV Show – Joys of Black & White
- What is Monochrome? And Why?
- 2 “Must Haves” to control highlights
- 3 Favourite B&W Conversion Methods
- **Break**
- 3 B&W Tips for Photoshop Layers
- ??? Tour of Nik Silver Efex Pro 2

Handouts

- PDF of this presentation available
  - 25.6 MB; 65 pages
- Summary of B&W Conversion Methods
- 7 Useful Photoshop Actions (3 pages)

Why Make B&W Images?

Why B&W?

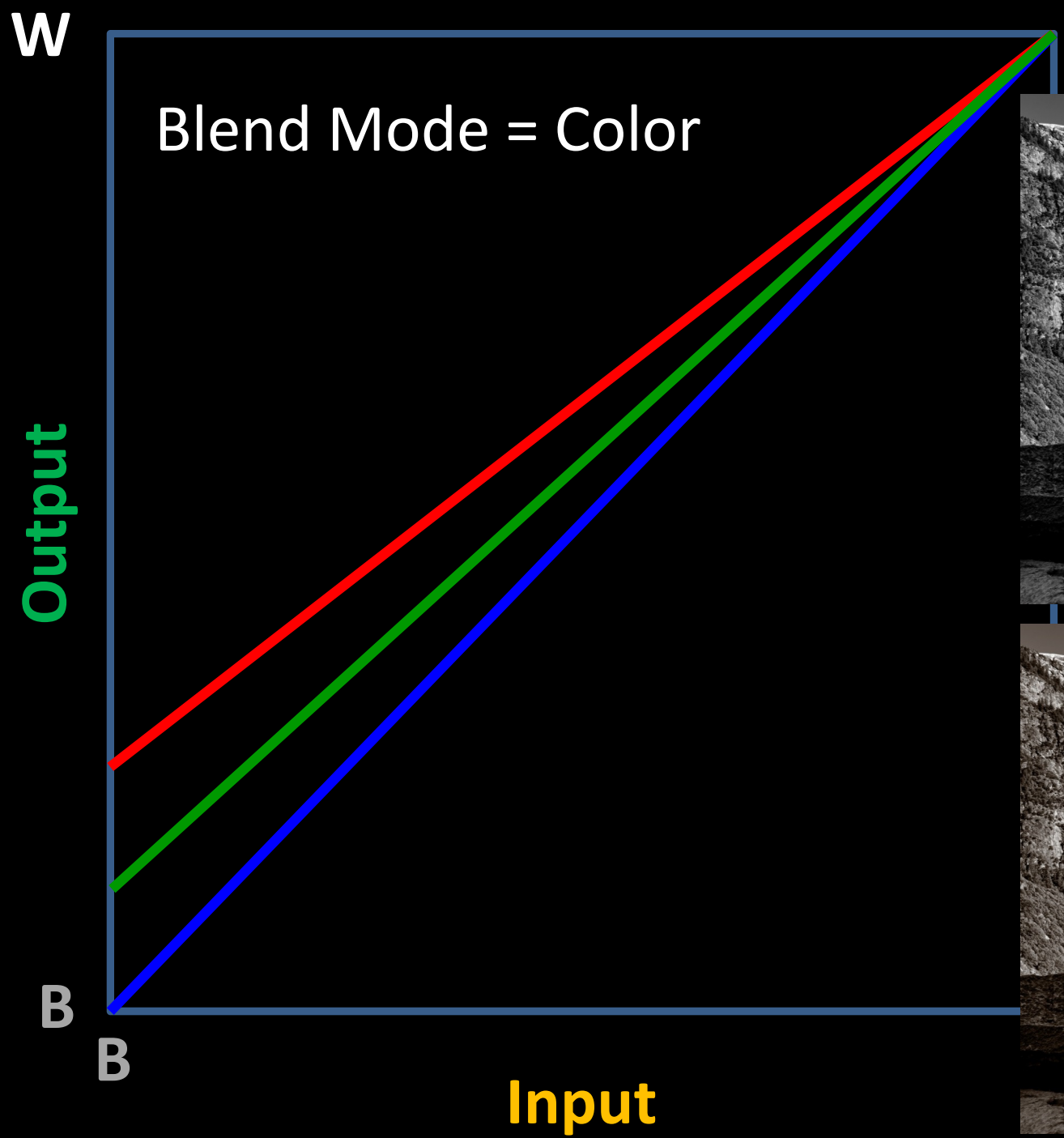
- Simpler and less confusing than color
- Shifts emphasis to design: lines, mood composition, texture, patterns, tones, contrast
- Much greater range of acceptable brightness, contrast and drama

What is Monochrome?

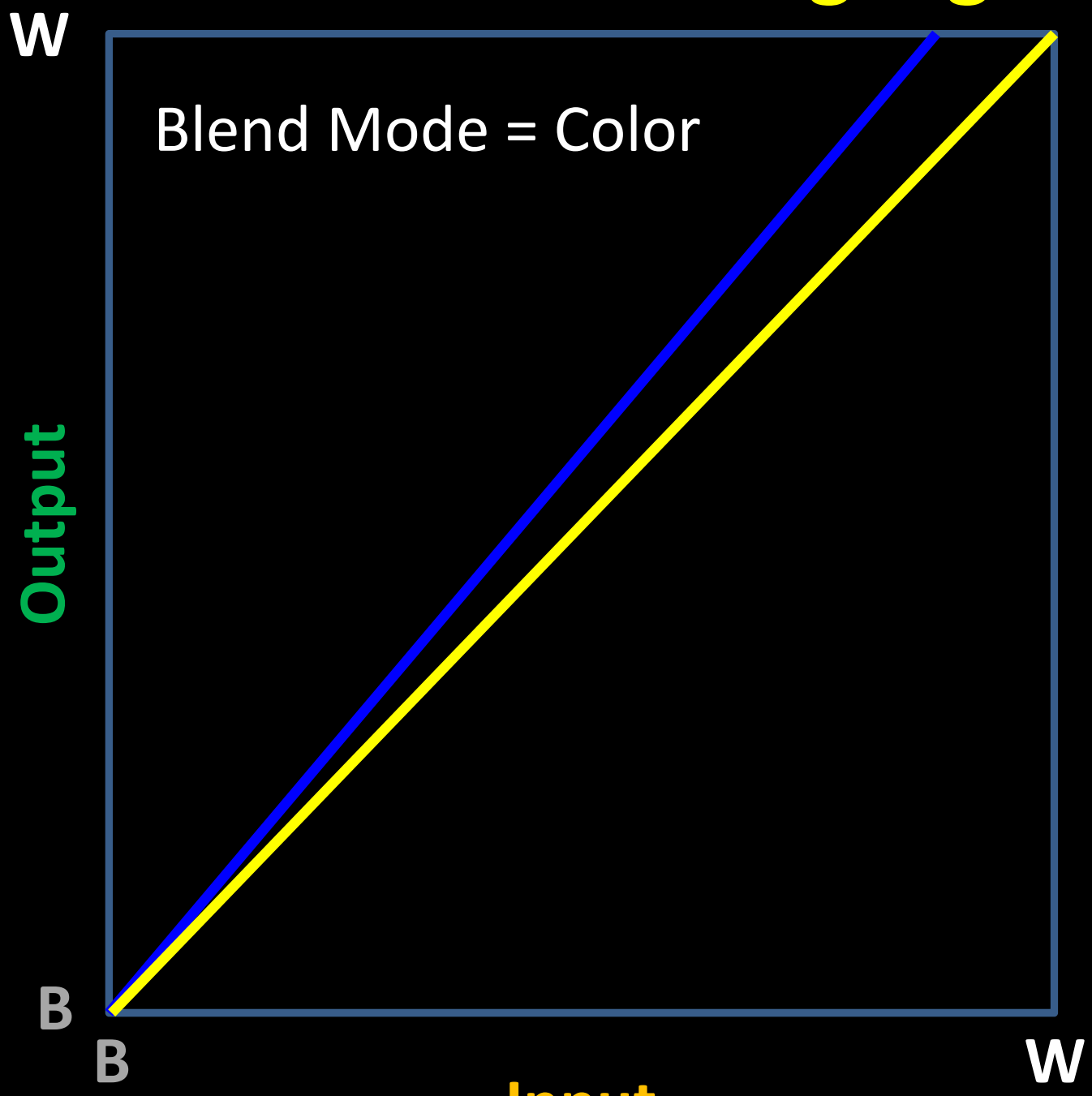
- ECC/GTCCC Definition:
  - A monochrome is defined as having no more than one colour, but it may be any single colour.
  - Images may be toned, tinted, or coloured, but with only a single colour
- "Pure" Monochrome: R = G = B or Grayscale
- What is allowable Tinting or Toning?

MonoTone: Warm Blacks

Both OK

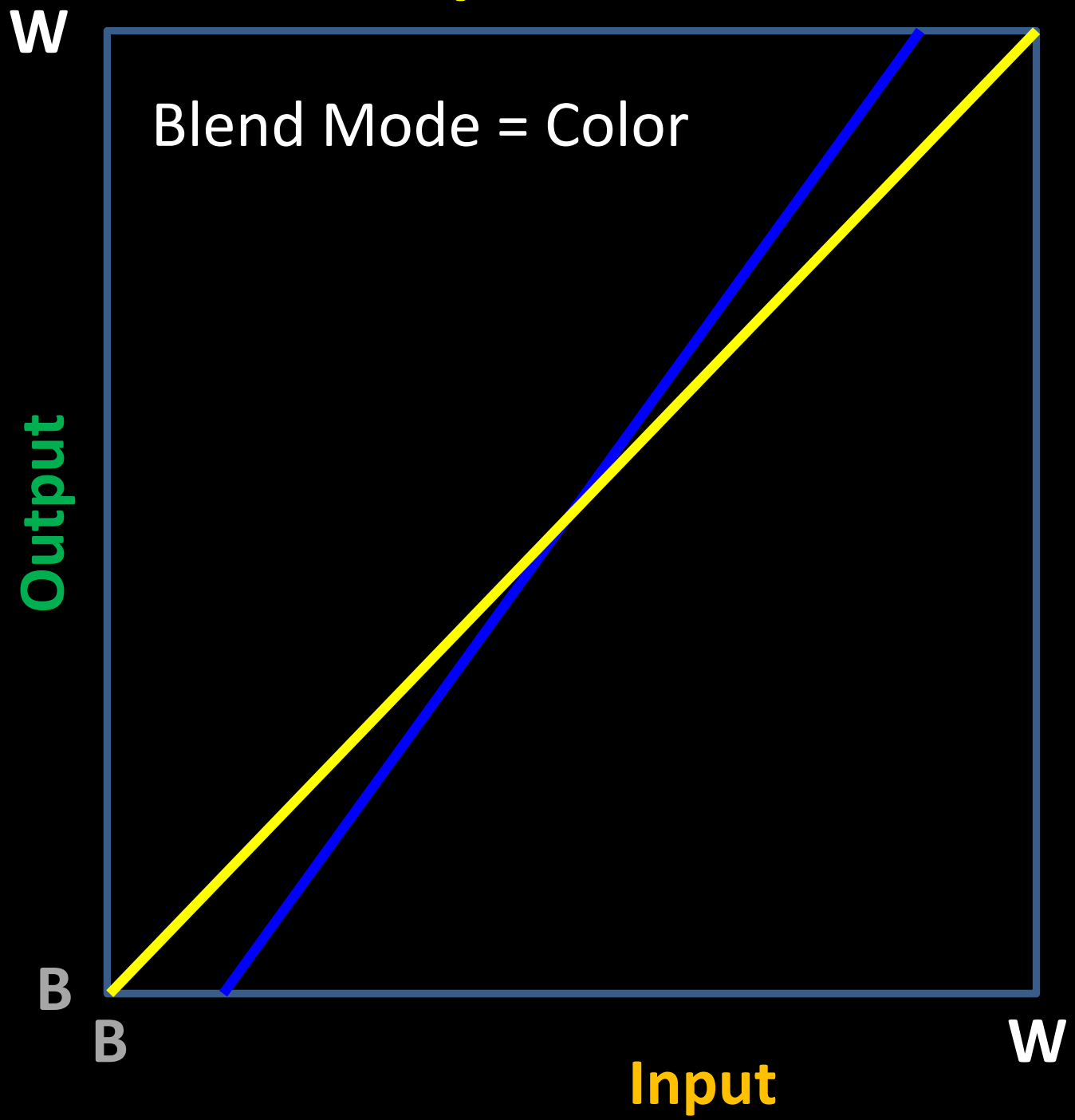


MonoTone: Cool Highlights

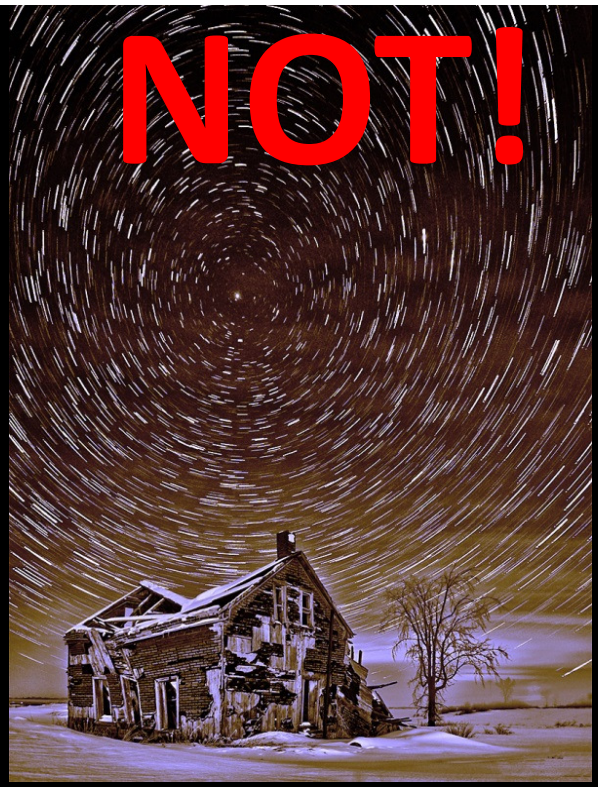


Both OK

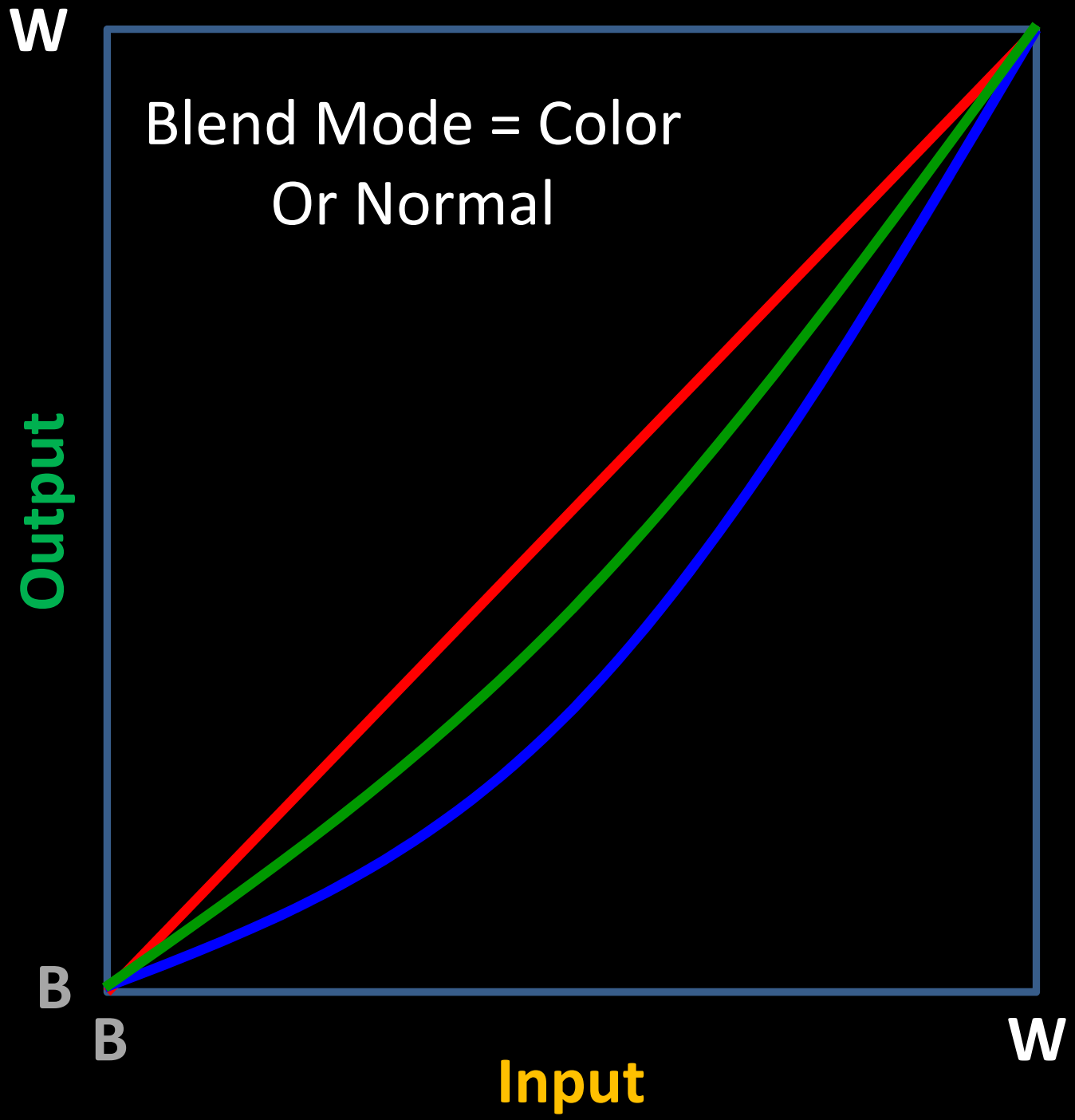
Duo-Tone (not Monochrome)



NOT!



Mid-Tone Mono: Nik Silver



This is similar To Photoshop Warming, Cooling and Color Filters – which are all OK for Monochrome

OK

Straight Mono

OK

“Nik Silver”

OK

PS Sepia Photo Filter

Monochrome

NOT!

Final Thoughts about Toning

- Work B&W Images in RGB Mode (not Grayscale)
  - triples the file size but
  - gives us the opportunity to tone the image in final step
- Steps
  - Add a Photo Filter Adjustment Layer (Sepia, Warming…), or
  - Add a Curves layer with Blending Mode: Color
    - Grab Green Curve at (75, 75) and pull down to (50, 75)
    - Grab Blue Curve at (128,128) and pull down to (64, 128)
    - Dial down the Opacity of the layer to taste (e.g. 10-35%) to give an approximation to Silver Efex Pro 2 Silver Toning
- Toning can be important for B&W Prints
  - e.g. to warm up a cooler paper (e.g. Lustre) or
  - To eliminate a color cast

B&W Conversion Methods

Conversion Objective:
Tonal Separation of main image elements

1. **Start with your *best* Color image**
   - Proper Exposure, Contrast, Saturation, Highlight & Shadow
2. Color → B&W by blending R, G, B channels
3. Optional contrast adjustment

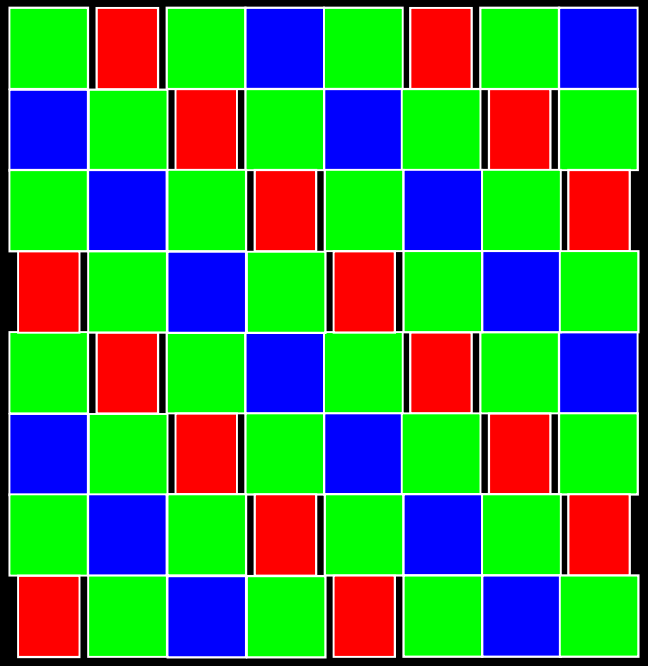
See Handout for a Summary of B&W Conversion Options

Digital Cameras Shoot in COLOR!

- Vast majority have a color filter fused above sensor
- 50% G 25% B 25% R
- Raw file is 1/3 size of TIFF
- Missing pixels are interpolated

So

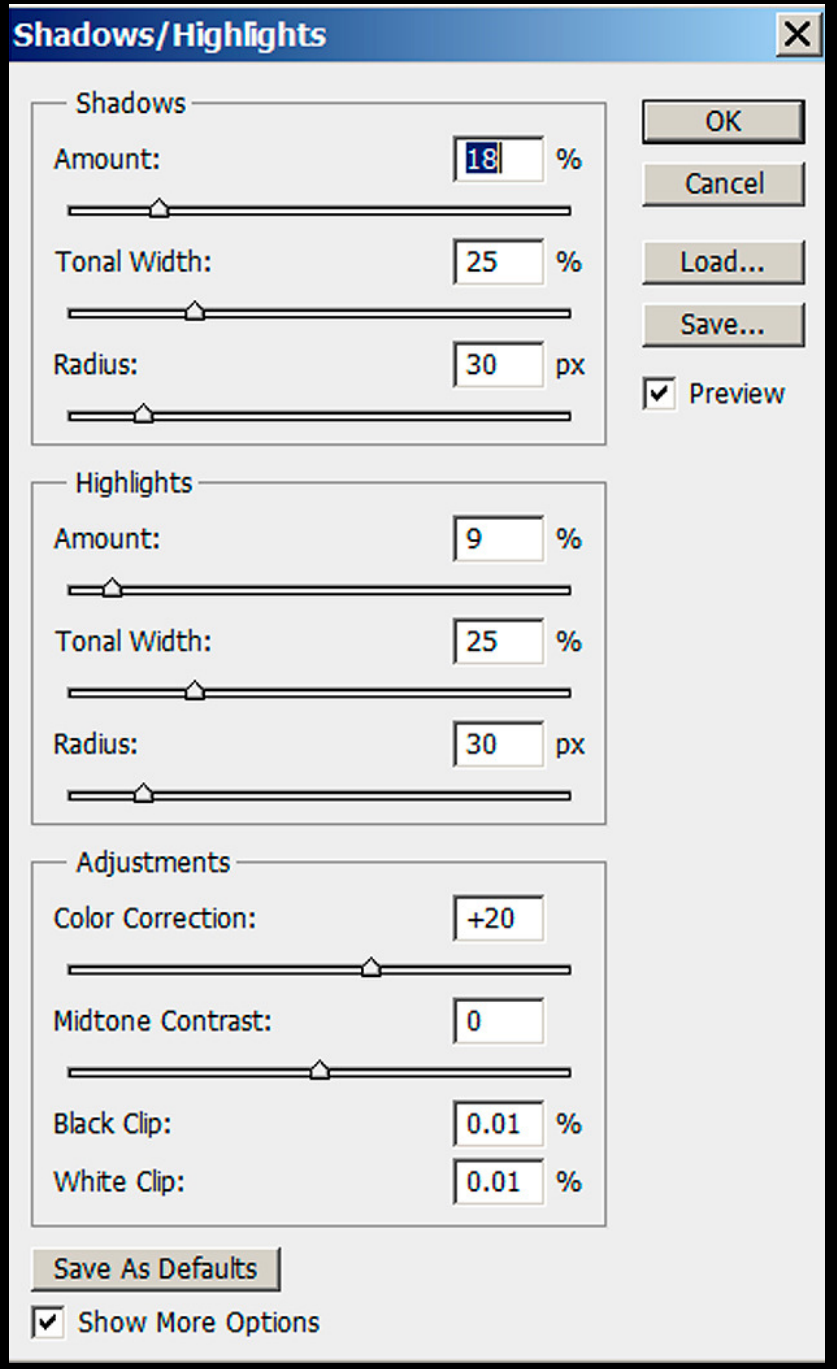
- The starting image is color
- Green channel generally the sharpest
- A camera displaying a B&W image has converted it



Quick Tip #1 for Any Image

Photoshop Shadows & Highlights

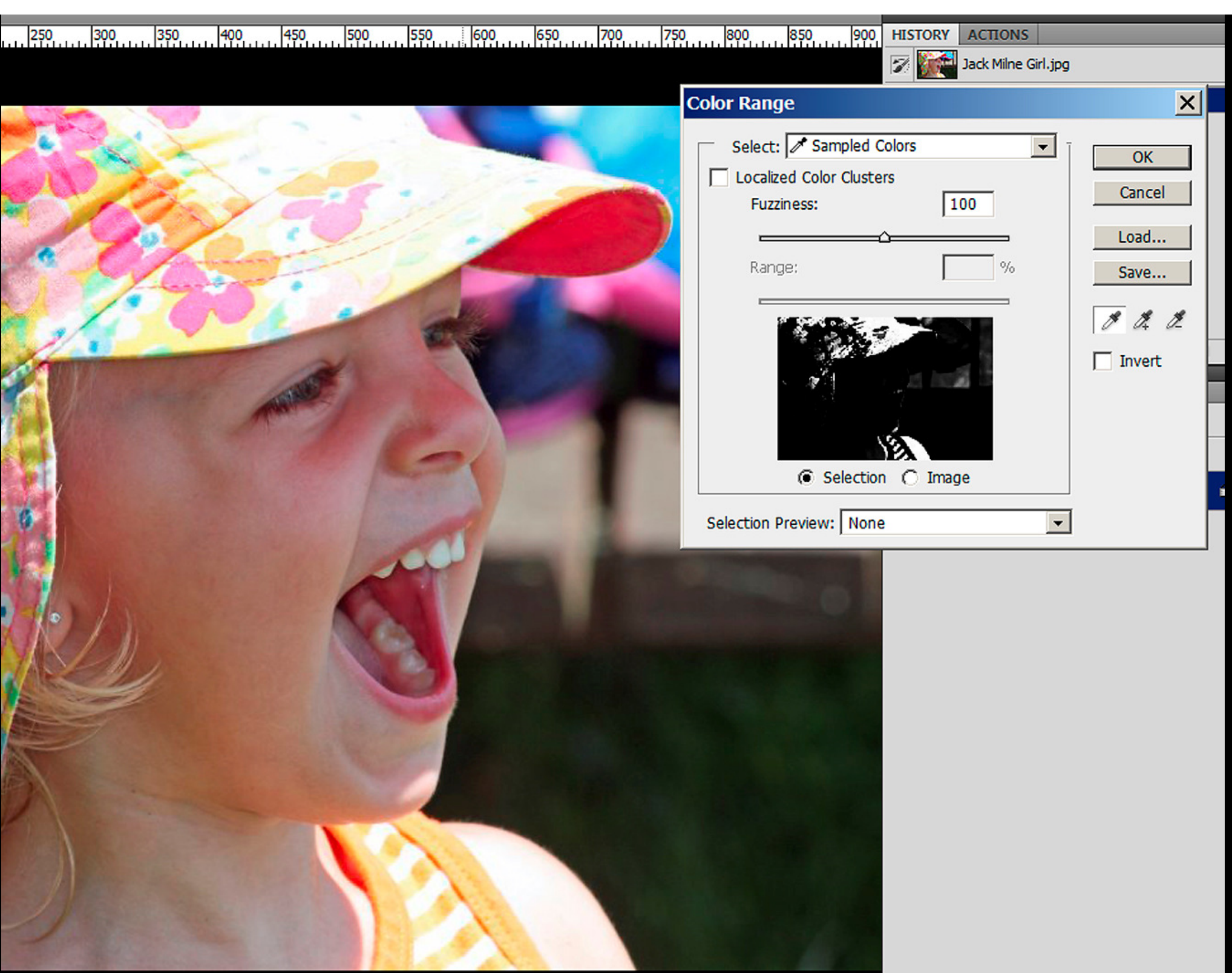
- ❑ Image > Adjustments > Shadows/Highlights > More Options
- ❑ Good default settings are shown:
  - Save these as DEFAULT
- ❑ In use
  - Decrease Radius if you are getting halos
  - Increase Amounts up to 30% before increasing Tonal Width
  - More adjustment may require more Color Correction
  - Apply before B&W conversion

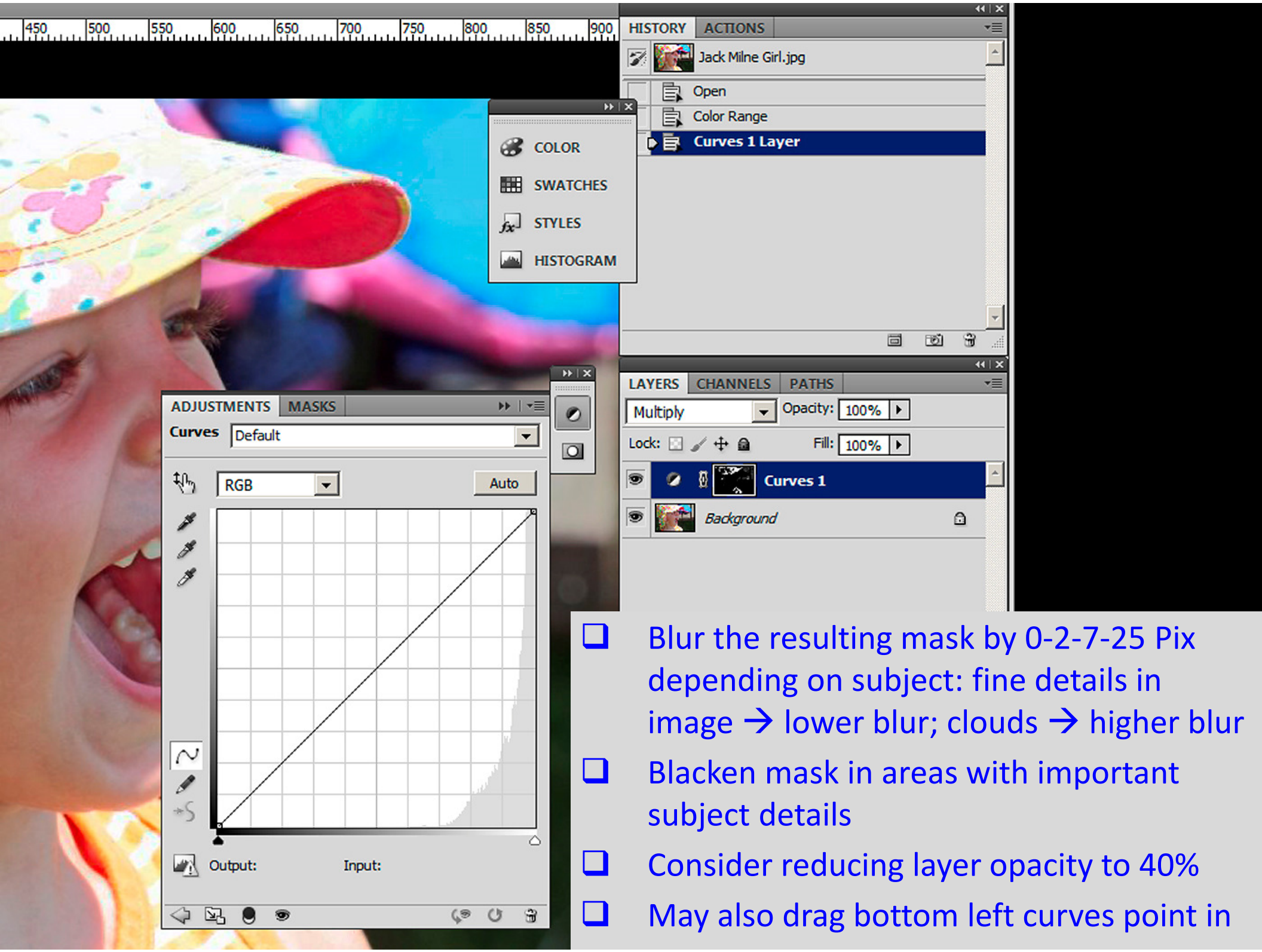


Quick Tip #2 for Any Image

Bring out highlight detail with "Multiply for Snow" Action (see List)

- ❑ Use Select > Color Range > Fuzziness 100 (basic) and click on highlight area – selects 4 stops of bright information
- ❑ Layer > New Adjustment Layer > Curves > Blending Mode = Multiply – loads selection into mask of curves layer
- ❑ Blur the resulting mask by 7 pixels (basic) for 12 MP image
- ❑ Some basics to remember:
  - 25 levels (0-255) is about one stop (2X exposure)
  - Smaller or larger Fuzziness to decrease or increase selection
  - Mask blur depends on subject: fine details in image → lower blur; clouds → higher blur
  - Blacken mask in areas with important subject details.

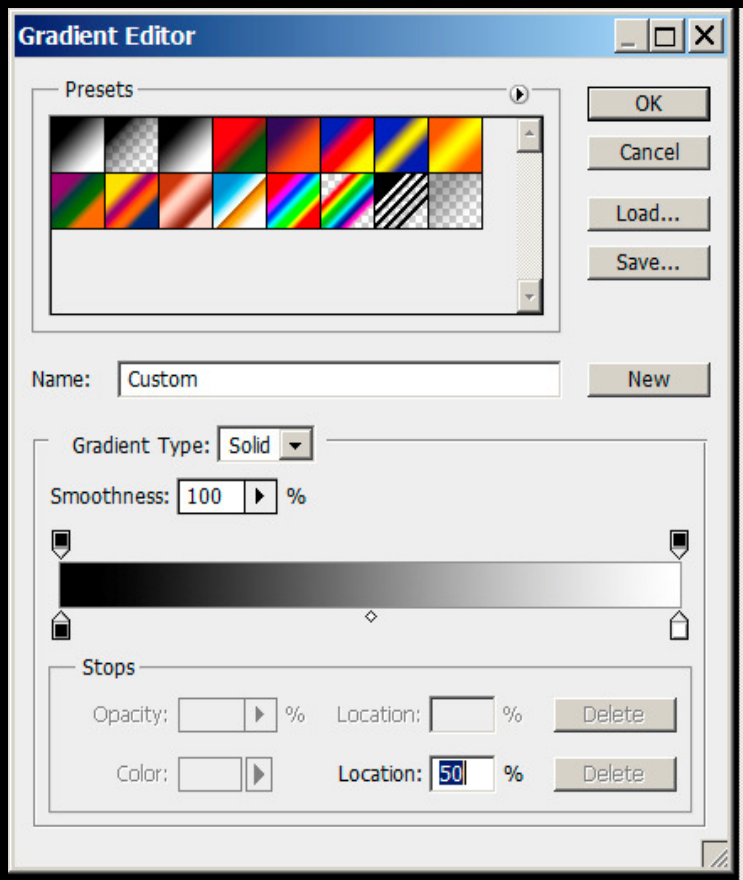

250
300
350
400
450
500
550
600
650
700
750
800
850
900
HISTORY
ACTIONS
Jack Milne Girl.jpg
Color Range
Select:
Sampled Colors
Localized Color Clusters
Fuzziness:
100
Range:
%
Selection
Image
OK
Cancel
Load...
Save...
Invert
Selection Preview:
None

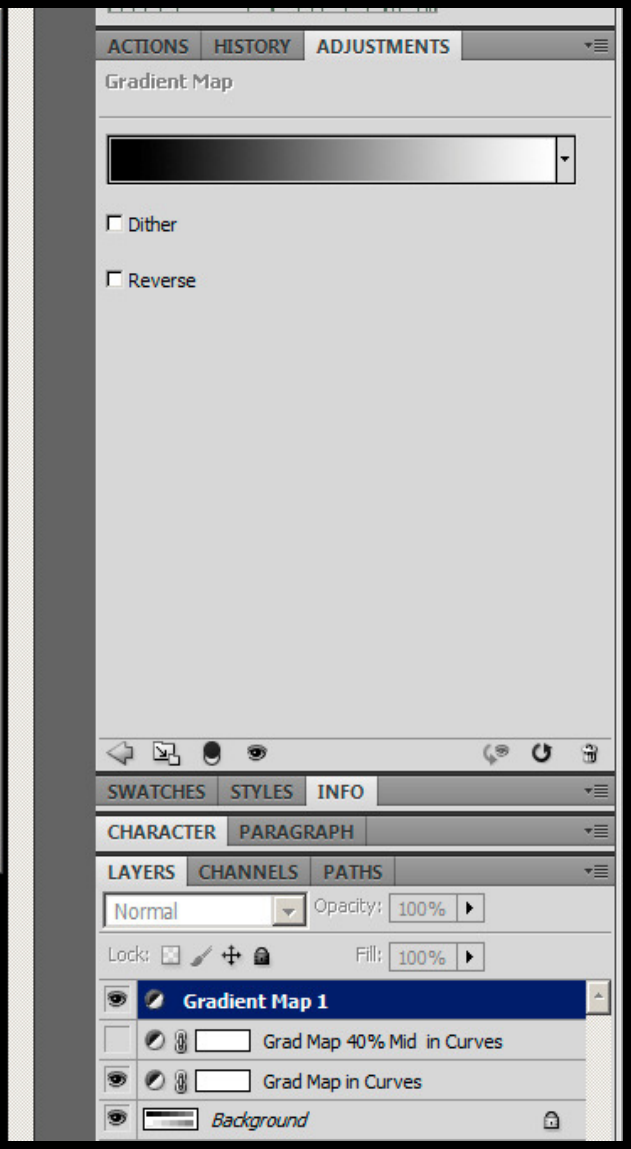


- Blur the resulting mask by 0-2-7-25 Pix depending on subject: fine details in image → lower blur; clouds → higher blur
- Blacken mask in areas with important subject details
- Consider reducing layer opacity to 40%
- May also drag bottom left curves point in

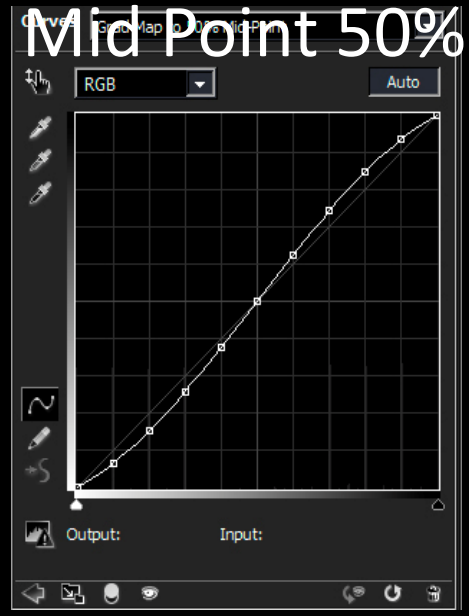
Favorite B&W Conv #1: Gradient Map

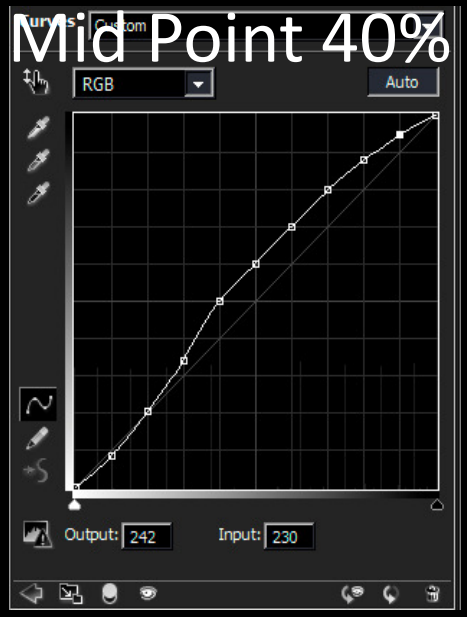
Equivalent to a Symmetrical Curves Contrast Layer





Same As





- Converts to B&W in Normal Mode
- Enhances Color Contrast in Luminosity Mode

Go to Photoshop

Half Dome Grad Map Example

Photoshop

Jack Milne Grad Map Example

Photoshop

Judy Preston Grad Map Example

Fav #2: LAB B&W Conv With Hi Pass Layer

- See Favorite Photoshop Action in Notes
  - Flatten Image (make sure it is 16 bit)
  - Convert to LAB
  - Duplicate background layer
  - Set upper layer blending mode to Soft Light
  - Apply Filter > Other > Hi Pass with 250 Pixels
  - Add a Hue Saturation Layer; Set saturation to zero
  - Consider the results, then
    - For less contrast, dial down Hi Pass Layer Opacity
    - For greater contrast, change blending mode to Overlay
  - When satisfied, save (optional), flatten, convert to RGB

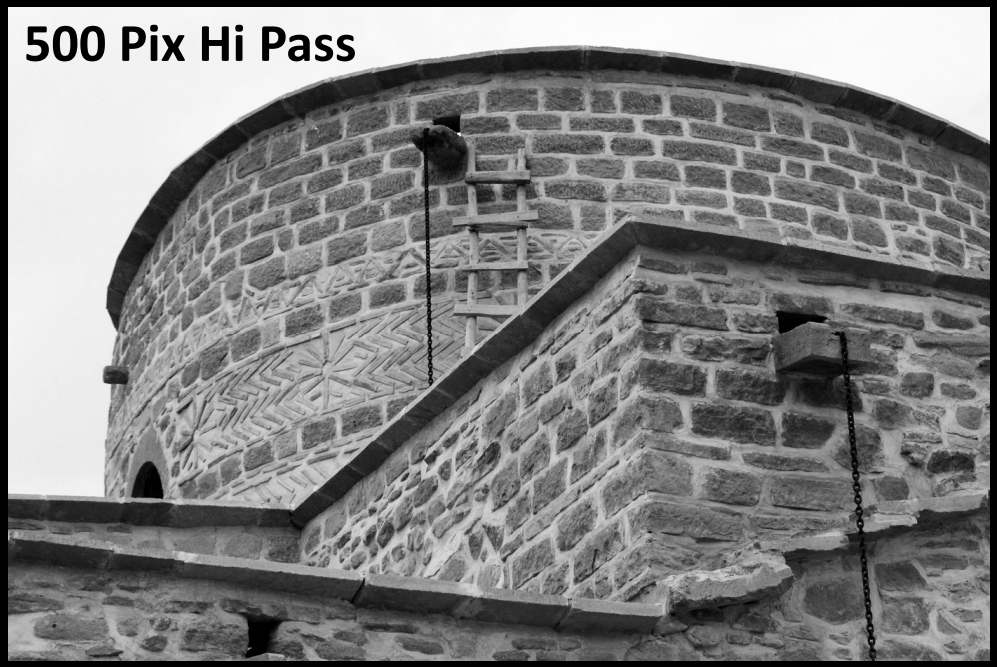
Go to Photoshop

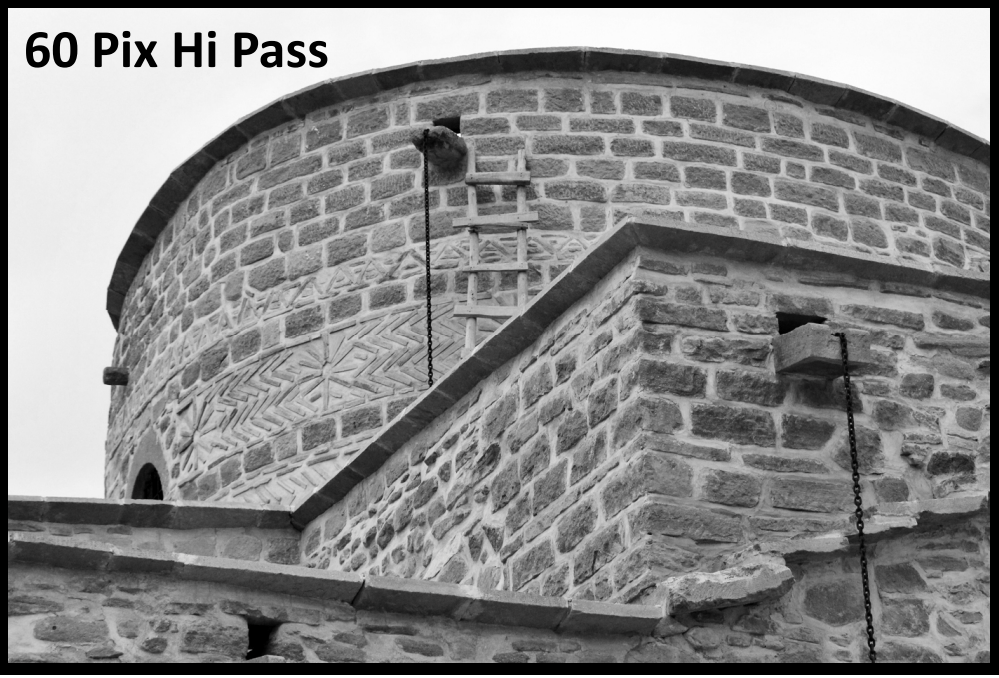
Bruno – France Rock LAB / HiPass

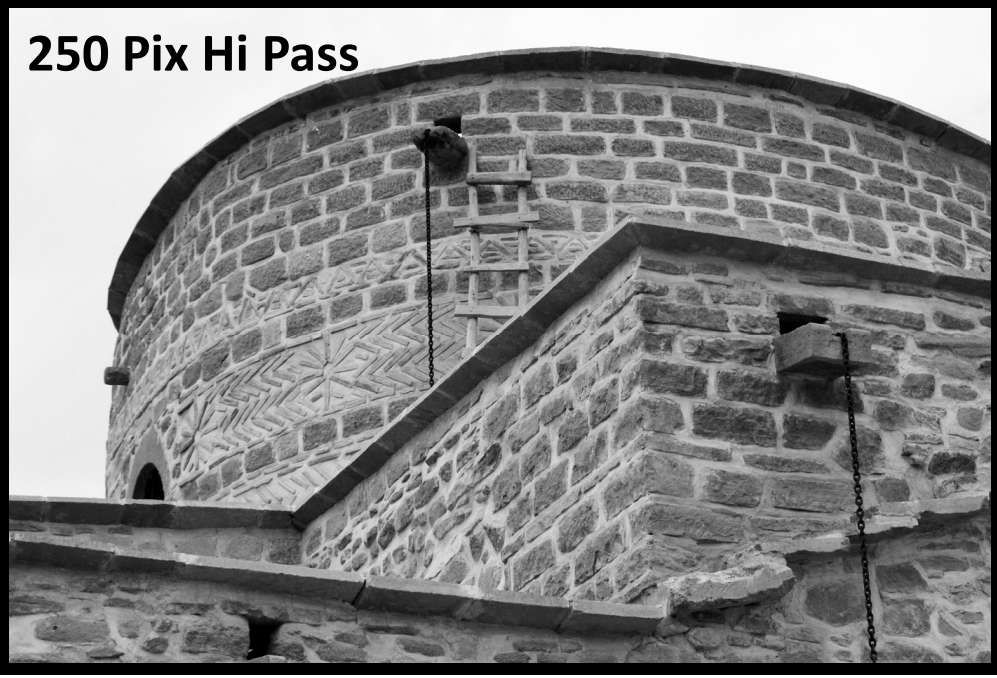
Dario – Barn LAB / HiPass Example

Eva – Castle / HiPass Example

Sema – LAB & Hi Pass Radius Effect







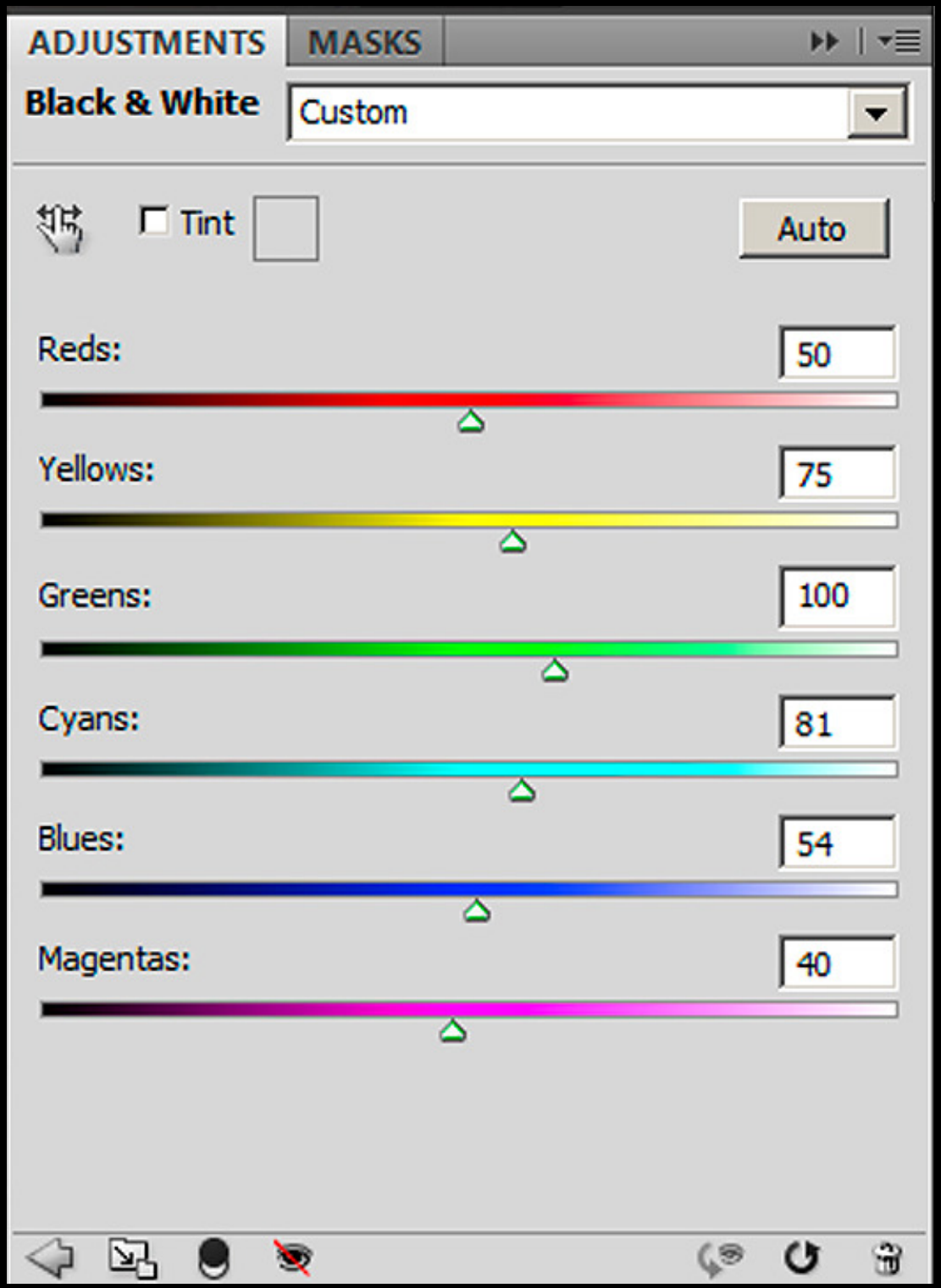
LAB B&W Conversion

- Can always dial down Opacity of Hi Pass Layer or try different Pixel Radiues
- Possible to change blending to affect midtones only
- 250 Pixel recommendation is for 12-16 MP image
- You may investigate scaling 250 Pixel radius:
  - Examples 500 pixels wide could used 30 Pix
  - 36 MP is 7300 wide so could use 500-1000 Pix
- Note: a one action conversion with no control over color mapping and tonal separation
  - May be better to have more control through color mixing

Favorite Conversion #3: PS B&W Layer

3: RGB	6: RYGCBM	8: ROYGCBMP
Channel Mixer	PS B&W Filter	Raw, LR

- Can also use Photoshop masks to localize color conversion
  - e.g. Encounter on the Inca Trail: low contrast conv for background; higher contrast for main subjects
- I almost always put a Grad Map Layer above the PS B&W Layer to increase contrast


ADJUSTMENTS
MASKS
Black & White
Custom
Tint
Auto
Reds:
50
Yellows:
75
Greens:
100
Cyans:
81
Blues:
54
Magentas:
40

Custom
Default
Blue Filter
Darker
Green Filter
High Contrast Blue Filter
High Contrast Red Filter
Infrared
Lighter
Maximum Black
Maximum White
Neutral Density
Red Filter
Yellow Filter
Custom

Using Photoshop B&W Filter

- Red Yellow Green Cyan Blue Magenta sliders 50/50/50/50/50/50 same as Saturation → 0
- Default is 40/60/40/60/20/80 (different again)
- Red, Green and Blue presets are similar (but not identical) to separate RGB Channels
- MORE of a slider (+ve) renders that color LIGHTER in B&W
- Use the sliders to develop tonal separation between elements in the image
- Try all the presets and some custom variations
- Maximize contrast with a Gradient Map layer on top of the B&W conversion layer
- Lightroom and Raw are very similar to Photoshop, but have extra Orange and Purple sliders for a total of 8 sliders

Grad Map Only

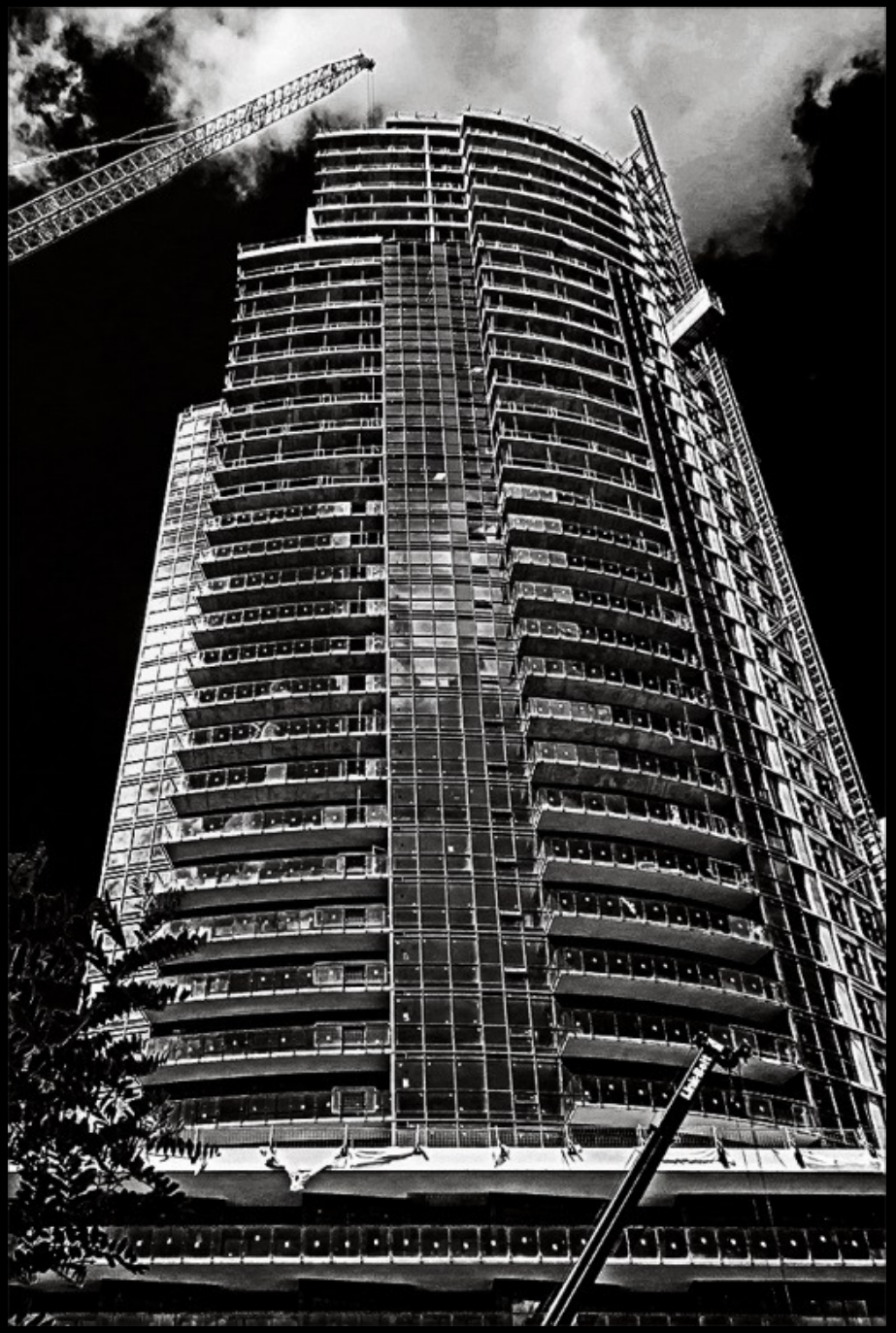
Green Filter

Red Filter

Yellow Filter

Sema – Mosque / B&W Filter

Dario – Building / B&W & Grad Map



B&W Conversion Recommendations: Basic

- Shoot in Raw if you can
- Work in an RGB space
  - Although Grayscale file is 1/3 the size, RGB offers
    - 256 vs 100 levels
    - Tinting ability
    - More complex processing options
- Work at 16 bit, even with a starting JPEG
  - Files are 2X larger, but less chance of histogram artefacts

B&W Conversion Recommendations: Advanced

- Work in Smart Objects for non-destructive editing
- Optimize image in color to take advantage of color contrast; then convert to B&W
- Explore different conversion methods to find one to suit the image. Radicalism suits B&W!

Contrast Enhancing B&W Conversion

My 3 Favorites:

- **Gradient Map Layer**
  - Midpoint may also be adjusted to overall lighten or darken
  - Works in Color if Grad Map Layer is in *Luminosity Mode*
- **LAB Conversion with 250 Pixel Hi Pass Sharpen**
  - Can use multiple Hi Pass Sharpen layers with different pixel radius (but it does expand file size)
  - Works in Color too
- Photoshop (or Lightroom) B&W conversion with sliders and Grad Map on top
  - Best way to customize the conversion to maximize tonal separation

Questions on Why B&W or B&W Conversion ?

Break?

3 more (of my 10) B&W Tips & Tricks in Photoshop Layers

Optimizing B&W Images

- We can only affect 3 things in a B&W image:
  - Lightness and Darkness
  - Global contrast
    - over the whole image by manipulating the histogram
  - Local contrast
    - In specific areas with special tools, painting or masking
- Most people are familiar with how to manipulate Global lightness, darkness and contrast
  - Curves, Brightness/Contrast etc.
- Local contrast may be manipulated with
  - Automatic tools (HiRLoAm USM or HiR HiPass Sharpen)
  - “Painting” tools applied to other adjustments

Why Photoshop and not Lightroom?

- Variety of Adjustment Layer Blending Modes gives much better control:
  - Overlay and Soft Light for Gray Layers
  - Multiply, Screen, Color Burn, Color Dodge affect pixels in much different ways than Normal
- Gradient Map Adjustment Layer
  - Easily choose any color for monochrome
  - Automatic contrast adjustment
- Macros (Actions) to simplify common processes
- Wider range of filters and sharpening options
  - Can apply multiples of same filters – e.g. USM, Hi Pass

Tip #1: Gray Layer to Balance Exposure

- Reversibly Rearrange the lighting to
  - Draw attention to the center of interest
  - Create a sense of “depth” in the image
  - Can also be used for color!
- Steps:
  1. Add a new FILL layer
  2. Fill with 50% gray
  3. Set blending mode to Overlay or Soft Light (preferred)
  4. Paint in the layer with white or black brush at 15±8% Opacity or
  5. Select image areas with sharp borders and fill with 5-40% white or black

Go to Photoshop

Encounter: Gray Layer

Go to Photoshop

Theresa Bryson Gray Layer

Tip #2: Improve “Structure” & “Detail” with USM

- Unsharp Mask with High Radius, Low Amount can substantially improve Local Contrast
  - USM affects LOCAL contrast on different scales
  - Automatic process works on everything (unless masked)
- USM Advantages to High Pass Sharpen in Overlay or Soft Light Blending Mode
  - USM can be executed in Smart Objects, multiple times without increasing file size
  - Hi Pass Sharpens require an extra image layer each time filter is used
- Disadvantage
  - USM used to extreme may blow highlights, so
- Use your judgment for USM vs Hi Pass Sharpen

Improve “Structure” or “Detail” with USM

- Steps (can be programmed into an Action; see Notes):
  1. Convert Image to Smart Object (for non-destructive editing)
  2. Filter → USM → 150%; 0.2 pixel; Threshold 0 is a kind of Raw sharpening (don’t use if Raw already sharpened or for JPEG)
  3. Filter → USM → 8%; 250 pixel; Threshold 1
     – makes bigger details more obvious
  4. Filter → USM → 30%; 30 pixel; Threshold 1
     – 30 pixel details more obvious
  5. Adjust Strength (%) of each filter to optimize the effect / avoid halos
  6. Threshold may be adjusted in the 0-3 range
     - higher Threshold makes effect <u>less</u> obvious; I usually start with 0
  7. Some halos may be minimized with masking

  Note: These settings apply to 12MP image (3000x4000 pixels). Scale accordingly the Pixel area for larger or smaller images.

  Note: 1-3 pixel sharpening is Print sharpening and is not included here

Go to Photoshop

Sema Toprak - Improving Structure

John Fraser - Improving Structure

Nelsona Dundas – Improving Structure

Eva Michalak - Improving Structure

Tip #3: Increasing Global Sense of Depth

- Perceptool™ Derivative from www.georgedewolfe.com
  - See list of Actions for free tool I call Poor Man's Perceptool™
- For $99 you can get a more sophisticated Perceptool™ 3.0 for CS6, CC

Go to Photoshop

Jack Milne: Lily PerceptoolTM

Jack Milne – Water Lily

Bruno : French Rock Perceptool™

Today: 5 (of my 10) B&W Tips & Tricks

1. Gray Layer to Balance Image lighting
   - ✓ Soft Light blending mode
2. HiRLoAm Unsharp Mask to improve local contrast
3. George deWolfe Perceptool™ to increase sense of depth
4. Contrast Enhancing B&W Conversion with Grad Map or LAB/Hi Pass Filter
5. Toning to create a feeling or look or eliminate color casts

Note: All but toning can apply to Color in Luminosity Mode

Another 5 B&W Tips & Tricks

4. Channel Mixer to improve global sharpness
5. Five Adjustment Layers for Local Adjustments
6. Outlining to improve sense of 3-D
7. Vignette or Edge Burn to contain the image
8. Sharpening with Luminance Mask for Printing

Note: All these can apply to Color in Luminosity Mode

Tips & Tricks

Questions?

Nik
Silver Efex Pro 2

Nik Silver Efex Pro 2

- Popular and effective B&W Software Package works as a Filter in Photoshop and Lightroom
  - Best used in a Smart Object image layer (non-destructive)
- List price $150 in Nik suite, but sometimes offered for $99
  - Sometimes get 30% off after taking a free 1 hr Webinar
- “Structure” is the USM-based detail enhancer
- I prefer it to Topaz B&W ($50) but
  - I use it only 10% of the time
  - Adds quite a bit of noise (recommend turning photo grain off)
- “U-Point” approach to Local Adjustments
  - OK for a small number of large areas NOT for outlining
- Try presets but make sure to try color filters early in process
- Still some processing benefits by further work in Photoshop after Nik program

Theresa Bryson Nik Silver Efex Pro 2

Some References

- www.georgedewolfe.com
  - B&W Printing – Creating the Digital Master Print (2009)
  - Digital Photography Fine Print Workshop (2006)
  - Fine books, though a bit dated. He works with History Brush when my (derivative) 5 layer approach is easier
- Keith Cooper

  http://www.northlight-images.co.uk/digital_black_white.html
  - Lots of info about how to get the most out of B&W
- Photoshop Blending Modes
  - www.photoblogstop.com/photoshop/photoshop-blend-modes-explained
- Nik Silver Efex Pro 2
  - http://www.niksoftware.com/silverefexpro/usa/entry.php

Remaining Questions?

www.tonypainephoto.com