A Bunch of Buzzwords?
Non-destructive, Selective, Non-linear and Non-modal Editing of Photographs

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Program

- Global and Local Editing
- The Editing Workflow
- The need for selective editing: dodge and burn in the digital age
- The layer or operations stack model
- Non-destructive editing
- Non-modal and non-linear
- Q&A (+ at any time)
• Magazine about digital photography
• Digital SLRs and also MF backs
• Photographic Workflow E-books
• Fine Art Printing
• Photoshop techniques
• Workflow Technique
• News Groups
• Portfolios
• Industry News
• About 6 million visitors per year

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Definition: Global or Selective

- **Global**
  - All areas of the image are treated equal
  - Means mostly evaluated based on the values of single pixels

- **Selective**
  - User has control which parts of the image gets involved
  - Mainly done via some sort of masking (manually defined or algorithmic masks)
Lightzone demo 1: Grass

- Demo 1: Grass and Red Rocks
Normal Editing Process

- RAW (WB, Color profiles, Tone Curves,...)
- Global tonality (Levels, Curves)
- Global color correction
- Noise removal and sharpening
- Lens and perspective corrections
- Dust and blemish removal
- Adaptive corrections (like Shadow/Highlight or LZ TonerMapper)
- Selective tonality (dodge & burn)
- Selective color correction
Need for selective editing

• Our eyes work selective (local contrast, see next slide)
• Images capturing introduces selective flaws
  – Haze
  – Corners soft or not in focus
  – Uneven light
  – Different color balances in one image
• Draw attention to image elements
• Dodge and Burn was done in the classic darkroom forever
Contrast & Our Eyes

- Conclusion: Local contrast is important, e.g. Sharpening
Shadows & Dark Pixels

- Shadows are not the same as dark pixels
Lightzone demo 2: Antelope

• Demo 2: Antelope Canyon
Ways to create selections

- Geometric shapes with feathering area
- Select by tonal range
- Select by color range
- Painting masks
- Other algorithmic created masks
Layer or operation stacks

- Solution for selective editing
  - Layers or operation stacks with layer masks
  - Blending modes
- The Photoshop layer model
  - Most layers are pixel layers and also masks are mainly pixel masks (grayscale images)
  - Most layers are destructive (except adjustment layers)
- The Lighzone layer Model
  - Operation layers
  - Geometric masks with feather range (no pixel masks)
  - All operations are non-destructive
Editing a bunch of slider settings?

• More of a side note

• Most RAW converters provide a lot of sliders (of course grouped in categories)

• Looking at the settings hardly documents what has changed to the default

• Operation stacks or layers way more document what you do
Lightzone Demo 3: Antelope Canyon

- Demo: Antelope Canyon #2
Non-modal and non-linear

• Non-modal
  – No or hardly any modal dialogs
  – Modal dialogs slows down for editing iterations
  – Prevents iterative editing which is the norm

• Non-linear
  – Tools can be changed in any order
  – Tools can be rearranged in the stack
Non-destructive editing

- The final image is actually:
  - Start image
  - Set (stack) of instructions (order matters a lot)
- What is the benefit?
  - Space
  - All steps can be modified later in any order (non-linear)
- Why is not all editing non-destructive?
  - Computing limitation (real-time updates)
  - Not all operations are easy to map to this model (pixel based masks)
- Is non-destructive editing the future?
  - Yes :-)
  - Lightzone shows the way
  - I expect all editors need to be this way in latest 2 years
Non-destructive editing 2

- Challenges
  - Computing speed
  - Incorporating computing expensive operations
  - Staying compatible with older controls (read the same stack in 10 years?)
  - Integration with other applications
  - Non standard tools and layer structures
Q&A

• All your questions belong here
Local (adaptive) operations

- Many editing tools work global (means only based on a single pixel value)
- Adaptive operation work reflecting neighbor pixels
  - Sharpening
  - Shadow/Highlight
  - ToneMappers (e.g. Photomatix or Lightzone)
  - More complex and computing intensive