How to Take/Make Better Pictures
Cool pseudo-photoshop music video

- [http://www.notthesa.me/](http://www.notthesa.me/)
photoshop tutorial spoof

- https://www.youtube.com/watch?v=EOar7toRw80
Photography tips

1. UV filters are a waste of time
2. Lens hoods aren't a necessity
3. If you're not using the hood, put it away
4. Don't treat your DSLR like it's your baby
5. Stop hating on others
6. Get cheap lens caps
7. Pack light
8. Use a zoom for convenience
9. Prime will make you think more
10. The 35mm is the most practical one lens setup (on the 1.5 crop)
11. The 50mm looks better
12. Better cameras don't make better photos
13. Know how your camera works before you go out to shoot
14. Always be ready for the shot
15. P-mode isn't just for beginners
16. Bump the ISO if needed
17. Auto ISO is your best friend
18. Rely on the Rule of Thirds
19. Take lots of shots
20. Don't take photos of any old sh*t
21. "If your pictures aren't good enough, you're not close enough" — Robert Capa
22. Contemplate your shot
23. The best equipment doesn't help if you're not standing in the right spot
24. Sharpness is overrated
25. Concept is king
26. Don't look like a wrongun (i.e. a creep)
27. Don't drink and shoot
28. Shoot when you're full of energy
29. Sometimes it feels great to wake up really early and shoot
30. Think about what light you want
31. Emulate the style of the greats to get started
32. …but don't keep doing it
33. Photography is as much a reflection of the person taking the photo
34. Shoot to please no one apart from yourself
35. Discreet or direct — it isn't all that important
36. Setting themes keeps you focused
37. Change things every once in a while to keep things fresh
38. Everyone has creative blocks
39. Be critical of yourself
40. "Seeing is not enough, you have to feel what you photograph" — Andre Kertesz
41. You need to be there with the camera
42. The relationship is about you and the subject, not you and the camera
43. Stop chimping
44. Be brutal when it comes to deleting awful photos
45. Show only your best work
46. Changing photos to B&W doesn't make an uninteresting shot interesting
47. Look at other people's work
48. Post your work online, let others critique your work
49. There is no easy way
50. ???

[ http://www.petapixel.com/2012/05/31/50-quick-photography-tips-in-less-than-15-minutes/ ]
Making better pictures
What do I know about pictures?

- Not much: amateur photographer, wildlife, travel, portrait
Photography

http://fredodurand.net/
I like equipment
Not a creativity session

• For those of us who are NOT talented photographers
• Heuristics, issues, that help get better photographs. Maybe not great photographs, but better
• If you are talented, good for you. Forget those “rules”, keep taking good photos.
Special effects

- Light painting
- Night
- Time Lapse
- MultiFredo™
- Collages
- See e.g. http://photoextremist.com/
http://okdothis.com/

A Community of Ideas

Introducing OKDOTTHIS, the photo app that brings idea sharing to your camera screen.

WATCH THE VIDEO

Available on the iPhone App Store
Take pictures, critique your pictures

• And get them critiqued (friends, internet)
• Give yourself a theme, constraints
• Look at contests online:
  – You don’t need to enter the contest, but use the theme
  – http://www.dpreview.com/challenges/
  – http://www.dpchallenge.com/
  – http://www.fredmiranda.com/forum/
  – http://gizmodo.com/#!shooting-challenge
Advice overview

• Simplify, avoid cluttered background

• Don’t center things

• Avoid harsh light

• White balance

• Portraits are all about the eyes

• Follow rules or really break them. No middle ground.
Background
Cluttered backgrounds are bad
Distracting background
Move your feet! (1 meter away)
Distracting background

50mm f/8

Model: Rob Wang
Shallow depth of field

50mm f/1.8

Model: Rob Wang
Shallow depth of field

85mm f/1.2

Model: Rob Wang
Crop
• If your pictures aren't good enough, you're not close enough" — Robert Capa
Physically clean up the background
Isolate using blur (Photoshop, layering)

• But maybe don’t over-do it
Clone brush/Poisson cleaning
**Problem...**

**Background distractions**
In the chaos of a young child's room, it is neither possible nor desirable to remove all the distractions, but toning them down would help to emphasize the main subject.

- Bronica SQ-A with 40 mm lens. ISO 64 film. Heidelberg Saphir II scanner.

**Desaturated background**
Applying Desaturate to the background, turning all the colors into gray has helped separate the girl from the numerous objects surrounding her. A large, soft-edged Brush tool was chosen and the printing mode was set to desaturation at 100 percent.

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From Digital Photographer’s Handbook
Compositing & matting

figure 7.17 BEFORE

figure 7.18 AFTER
Fixing a cluttered background

• Change viewpoint
• Shallow depth of field
• Frame tighter
• Modify scene (move objects, add backdrop)
• Retouch (blur, desaturate, darken)
Question?

• Recap: avoid distracting background
• Simplify, get close
Composition
Get low

• Try to be at eye level
Bad angles

- https://www.youtube.com/watch?v=8EmRZO9fwvk&feature=youtu.be
Lower is better

Eye level
Or really get high

- As usual, follow a rule or really break it.
God's Eye View in movies

- http://www.youtube.com/watch?v=kCbTe9jBwB4
The rule of thirds is a guideline developed by artists centuries ago. When the subject—or its most important element—is placed near one of the intersecting points of an imaginary grid, the viewer’s eye is led through the frame. The result is an aesthetically strong image.
Rule of the thirds
Rule of the Third
Rule of the Third
Variations of the rule of the thirds

- Golden ratio
  - Very questionable superstition

- Rule of the fifth

- ...

- Only one thing matters: don’t center!
Don’t center, especially for motion
Don’t center, especially for motion
Don’t center, especially for motion
... or do center
Question

• Recap:
  – avoid distracting background
  – be at eye level, get low
  – avoid centering subject
Warning: near-parallelism

• In particular, keep horizon level
• Use crop with rotation to fix this

Don't let lines unintentionally throw your photo off balance. When you shoot the horizon or a building, keep the straight lines level—unless you're shooting at a dramatic, intentional angle.

http://www.fotofinish.com/resources/centers/photo/takingpictures.htm

• or use bubble level on flash hot shoe
Correct perspective (homography!)

+ you control reflection and perspective independently
Architectural photography

Build on diagonal lines, or get straight
Try unusual angles

• **Do or don't:**
  Either perfectly vertical or at least 30 degrees

http://www.fotofinish.com/resources/centers/photo/takingpictures.htm
Composition/viewpoint

- Get low
  - at eye level of subject
- Avoid centering subject
  - rule of the third
- Keep horizon horizontal
Question

• Recap:
  – avoid distracting background
  – avoid centering subject
  – get low
  – careful with alignment/horizon
Light
Bottom line

• Don't get married on a sunny day!
Go in the shade

- Light is more diffuse

Bad

Better
Overcast days are the best

- Just don’t put the sky in the frame

The weather conditions

The pictures

Other overcast-day pictures
Best time of day: sunset & sunrise

- +/- 1 hour
- “Golden hours”
- Night photography: always near sunset/sunrise
  – because of nice diffuse light

Mid day: often not great

less than 1 hour after sunrise/before sunset

During sunset or sunrise

After sunset
less than 1 hour after sunrise

During sunset/sunrise

After sunset
• **10 minutes after sunset**
After sunset: blue hour
Add fill flash

• For harsh lighting conditions
• Illuminate shadows with flash to reduce dynamic range
• But set the flash to -1.5 or -2 EV (3 to 4 times darker than existing lighting)

Without flash
With fill flash
Add fill in light on faces: Photoshop
Add fill in light on faces
Flash as the main light source

Problems:
- poor location,
  no shape modeling
- small light source
- annoying shadows
- often, too white
  compared to available light
Solution: bounce flash

• Ceiling bounce: much better, more diffuse
• Disadvantage: shadows under the eyes
Solution: wall bounce flash

- Better shape modeling (light from the side), good lighting of the eyes
- Disadvantage: walls not always white
Flash Diffuser

• Two tricks:
  – diffuser illuminates the whole room, light is very diffuse but also illuminates directly
  – diffuser is orange and matches ambient light
Reflect light

http://studiostyles.net/location-lighting-techniques-finding-the-light/
Options for digital fill light

• Use the fill-in slider in Lightroom or camera raw
• Use an adjustment layer with a mask
  – paint the mask white only in the area to brighten.
Landscape: HDR & Tone mapping
Light

- Avoid harsh light... unless you want to play with shadows
  - Do or don't
Light & color

• Avoid harsh light… unless you want to play with shadows
• Sunrise & sunset are best
• Cloudy days are great as long as the sky is not in the picture
• For sunny days, shade areas are best
• Avoid direct flash
• HDR, tone map
White balance
White balance problem

• When watching a picture on screen or print, we adapt to the illuminant of the room, not that of the scene in the picture
• The eye cares more about objects’ intrinsic color, not the color of the light leaving the objects
• We need to discount the color of the light source

Same object, different illuminants
Von Kries adaptation

• Multiply each channel by a gain factor
• Note that the light source could have a more complex effect
  – Arbitrary 3x3 matrix
  – More complex spectrum transformation

http://www.cambridgeincolour.com/tutorials/white-balance.htm
Best way to do white balance

- Grey card:
- Take a picture of a neutral object (white or gray)
- Deduce the weight of each channel
- If the object is recoded as $r_w$, $g_w$, $b_w$ use weights $k/r_w$, $k/g_w$, $k/b_w$ where $k$ controls the exposure
Party name tags

• Provide excellent white references!
Challenge: mixed lighting

• In particular, flash+ambient
• Solution: put yellowish gel on the flash
• Solution 2:
  http://people.csail.mit.edu/ehsu/work/sig08lme/
Ultimate white balance solution

• But note that white balance affects the tones you get
Recap

• Follow rules or really break them
• Simplify, avoid cluttered background
  – move your viewpoint, frame tighter, shallow depth of field, desaturate
• Don’t center things
  – rule of the third, leave space for gaze or motion
• Avoid harsh light
  – golden hours, overcast days, avoid direct sunlight, go in the shade, fill flash, bounce flash, post-processing
• White balance
Portraits
Portraits: It’s all about the eyes

• Eyes should be sharp & shiny
• Be at eye level
• Make sure lighting is not harsh
• Shallow depth of field can help
• Add vignetting to focus attention
• Get the white balance right (maybe a little warm)
• Try Black and white
• Telephoto: isolate the subject
• Wide angle: approachable and include surrounding
• Don’t hesitate to over-shoot: bits are cheap
Telephoto vs. wide angle

300mm f/2.8

24-70
• [http://www.diyphotography.net/focal-length-matter-when-shooting-faces](http://www.diyphotography.net/focal-length-matter-when-shooting-faces)
Composition: Where to crop or not

http://www.flickr.com/photos/lovingthemoments/5740539069/

By J. Southard Photography
Tougher than portraits: 2 people

- Focus is harder: both sets of eyes should be sharp
  - tradeoff between complex background
- Hard to get both expressions right
- => shoot like crazy
- => use photomontage

Not great (mother’s eyes are out of focus)  Better
Interactive Digital Photomontage

- Aseem Agarwala et al.
  
  http://grail.cs.washington.edu/projects/photom montage/

- Merge multiple images

- User puts strokes to select which image where

- Graph cut + Poisson reconstruction

Figure 1 From a set of five source images (of which four are shown on the left), we quickly create a composite family portrait in which everyone is smiling and looking at the camera (right). We simply flip through the stack and coarsely draw strokes using the designated source image objective over the people we wish to add to the composite. The user-applied strokes and computed regions are color-coded by the borders of the source images on the left (middle).
Landscape/architecture
Landscape / architecture

- Get a foreground element
  - rock, tree, flower
- Rule of the thirds, diagonals
  - in particular for the horizon
- Don’t hesitate to zoom in
- Manage dynamic range
  - sky is always too bright
  - graduated neutral density, HDR
  - golden hours or right after sunset
- Use a polarizer
  - darkens the sky, make colors stand out
- Alignments
  - Keep horizon straight
  - For architecture, correct verticals
- Don’t be deterred by stormy weather
- Slow shutter speed for water
Foreground helps
More interesting (foreground)
Parallels: do or don’t
Special landscape

- https://www.youtube.com/watch?v=yFp9pndbSKM#!
Software
Software

- Software adjustment can make a big difference!

Before

After

Here:
- exposure
- curve
- clarity
- vibrance
Software

- Shoot in RAW for more flexibility
- Photo management & lightweight editing
  - Lightroom, Aperture, Lightzone, Darktable
  - Fix white balance (make white white!)
  - Adjust exposure (e.g. brighter for snow scene)
  - Crop to improve composition
  - Manage contrast using the curve
  - Boost saturation (or vibrance) a little.
  - Add light to dark areas (fill light)
  - Sharpen a bit
  - Convert to black and white
- Use Photoshop only if you really need to
Why shoot RAW

• White balance
• More quantization levels
• disk space/memory cards are cheap
White balance

• Party name tags provide excellent white references!
Exposure correction

- I told the camera to make the image 1.8 times brighter
- Still too dark
Exposure correction

- I told the camera to make the image 1.8 times brighter
- I still had to brighten it in software
Crop
Manage contrast with the curve

• Before curve adjustment
Manage contrast with the curve

- After curve adjustment (a tad overdone)
Boost saturation or vibrance

• Before
Boost saturation or vibrance

- After
Fill light

• Before fill light
Fill light

• After fill light
Graduated filter

Before
Graduated filter

Darken sky

After

Brighten ground
Black and white

- Helps when colors are distracting
Black and white

- Often needs to boost contrast
Other useful tools/sliders

- Black point
- Recovery (to save clipped highlights)
- Denoising
- Clarity
- Local adjustments and gradient
- Vignetting
- Optical aberration correction
- Perspective correction
Organize, rate, delete

• On a photo trip, I keep 1% of pictures
  – That’s also the rate of most pros
  – Yes, I shoot more photos than most people
  – But I also keep a lot fewer
Organize, rate, delete

- My strategy: multipass algorithm
  - Go through all pictures, and rate the OK ones 1 star
  - Go through the 1 star and rate the better ones 2 stars
  - Etc.
If you’re really good

- Keyword your pictures
Software ++

- Stitch panoramas
- High-Dynamic-Range
- Multiple exposures
- Macro focal stack

http://www.cambridgeincolour.com/tutorials/focus-stacking.htm
Recap: Software

- Shoot in RAW for more flexibility
- Photo management & lightweight editing
  - Lightroom, Aperture, Lightzone, Darktable
  - Fix white balance (make white white!)
  - Adjust exposure (e.g. brighter for snow scene)
  - Crop to improve composition
  - Manage contrast using the curve
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  - Add light to dark areas (fill light)
  - Sharpen a bit
  - Convert to black and white
- Use Photoshop only if you really need to
Equipment
Choosing a camera

- If you can afford it, get an SLR
  - bigger sensor = less noise in low light
  - bigger sensor = shallower depth of field
  - faster autofocus
  - more lens choice, higher optical quality

- Do not worry about
  - megapixels - 6 is way enough
  - brand - they’re all good enough
  - body - they all have the same image quality

- Worry about lenses

- Worry about lighting gear (cheap and effective)
Equipment

• Do get an SLR or mirrorless, compacts are too limited
• Don't worry about brand (with a bias for Nikon/Canon/Sony)
• Don't worry about the body, get the cheapest one
• Worry about lenses
  – Zooms are convenient but quality can be a problem
    • Avoid large range (e.g. 18-200) they’re not bad when stopped down, but quality isn’t great at full aperture
    • Maximum aperture matters (the smaller the number, the better)
  – Get a prime in the 35-85mm range (cheap, high quality, wide aperture) 50mm f/1.8
• Count $500 to 1k for basic configuration
Lens quality varies!
Zoom vs. prime

- The left image is with an expensive zoom
- Still softer than the prime on the right

source: the luminous landscape
Online reviews

Lens. vs. body

- [http://www.youtube.com/watch?v=hk5IMmEDWH4&feature=player_embedded](http://www.youtube.com/watch?v=hk5IMmEDWH4&feature=player_embedded)
- Pro SLR with cheap lens vs cheap SLR with pro lens
Equipment: accessories

- Good flash photography is difficult!
  - Because you typically deal with 2 sources of light: flash and ambient
  - You need to get the exposure right for both!
  - You need to get the white balance right for both!
- Get an external flash if you want to take “event” pictures
  - The built-in flash is only good for fill flash (in bright sunlight)
  - Use external flash, orient towards (white) wall/ceiling
  - Get a diffuser (omnibounce)
  - Get yellow gel (or diffuser) to match indoor lighting
- Get a tripod
  - important for landscape, cityscape
  - get a good one: stability is important
Table of desired features

- ISO setting (easy, auto)
- Mirror lockup
- remote


Nikon

Tends to be a tad cheaper

- D3100 & D5100 are good. D7000 if you want to be more serious
- 18-70 or 17-55 f/2.8
- 55-200 is surprisingly not so bad and super cheap
- Get the new 50mm f/1.8 (the old one won’t focus)
Canon

- Rebel T3 or T3i for cheap options, 7D if your bank account permits
- If you get the kit lens, get IS
- 17-85 or 17-55 f/2.8
- 70-200 f/4.0 (amazing lens)
- 50mm f/1.8
- 100mm f/2.8 macro (great also for portraits)
Mirrorless systems

- e.g. micro 4/3, Sony Alpha Nex
- Smaller
- Autofocus not as good (contrast detection, not stereo)
- Sensor not quite as good yet (smaller)
- More depth of field
- No optical viewfinder
- Recommendation:
  - Sony Nex3 or 5
  - Panasonic GF2
Other brands

Not as big a range, future not always clear (see Minolta), have been slower to get to digital SLR

- **Olympus**
  - Good system, but smaller sensor

- **Pentax**
  - Good entry camera

- **Sigma**
  - Intriguing sensor (Foveon), limited system, noise is an issue

- **Fuji**
  - One-trick pony (the sensor)
  - Nikon body

- **Sony**
  - Pretty good.
  - Lens selection not as good as Nikon/Canon
Lighting

• Cheapest way to improve your photo
• http://strobist.blogspot.com/2006/03/lighting-101.html
Basic lighting for portraits

- 1 flash 1 umbrella 1 stand one reflector
- better: two flashes 2 umbrellas
It’s the light that counts

- [http://fstoppers.com/iphone](http://fstoppers.com/iphone)
- Photos taken with an iphone 3GS
  - and a lot of lighting equipment

See also [http://www.youtube.com/watch?v=o063wC_SNxo&feature=player_embedded](http://www.youtube.com/watch?v=o063wC_SNxo&feature=player_embedded)
Cheap lighting-based setup

• Cheap compact with a flash hotshoe
  – and a manual mode
• Cheap lighting equipment (manual flashes)
• DIY diffusers and reflectors

• Good for
  – Portraits
  – Macro
• See
  – http://www.diyphotography.net/
  – http://strobist.blogspot.com/
Equipment for various genres
Portrait

- Cheap body
- Wide aperture often matters (f/2.8 and below)
- 50mm f/1.8 is a must
- Invest in an external flash and lighting
  - reflector
- Depends on perspective you like:
  - 17-55 f/2.8
  - 50mm f/1.8
  - 85 f/1.8
  - 70-200mm (f/2.8 if you can afford it)
Kids / action

- Good Autofocus matters. Get a slightly more expensive body (7D, D7000)
- Fast lens (wide aperture)
  - 17-55 f/2.8
  - 50mm f/1.8 (for kids)
  - 70-200 f/2.8
- External flash for kids.
**Landscape**

- Get a cheap body
- Good tripod + remote trigger
- Polarizing filter
- Lenses:
  - Large aperture does not matter. You want large depth of field
  - Main one: 17-85 or 17-70
  - Depending on style:
    - Wider angle, e.g. 10-22 but include a foreground element
    - Telephoto, surprisingly useful, e.g. 75-300
Wildlife

- Expensive!
- Need good autofocus and long lenses
- At least 300mm on small sensor
- A flash and a better beamer
Macro

- Easier with a smaller sensor
  - more depth of field
  - closer minimum focus
- 100mm macro or 60mm macro lens (1:1 magnification)
- Sturdy tripod + remote trigger
- Lighting equipment
  - reflector / diffuser (DIY)
  - flash or some external light
  - lots of DIY options
Plan

- Imaging parameters
  - Camera
  - Lighting
  - Software

- Equipment

- Improving your pictures
Portraits: dirty tricks
• Pascal Dangin http://www.newyorker.com/reporting/2008/05/12/080512fa_fact_collins

• My favorite quote: “There is no photographic establishment of any note that does not employ artists at high salaries—we understand not less than £1 a day—in touching, and colouring, and finishing from nature those portraits for which the camera may be said to have laid the foundation,” Lady Elizabeth Eastlake, the art historian and critic, noted in an essay in 1857.


• http://www.time.com/time/fashion/20030908/insider/
PHOTOGRAPHIC PRINTS OFTEN COME SPOTTED, OR FAINT OR MUDDY IN SOME PLACES

BY RETOUCHING THE PRINT, SUCH DEFECTS CAN BE REMOVED. THE IDEA IS YOU MAKE THE PICTURE MORE CONTRASTY AND ADD DETAILS THAT WILL MAKE IT MORE INTERESTING.
http://petapixel.com/2013/05/08/how-photographers-photoshopped-their-pictures-back-in-1946/
http://petapixel.com/2013/05/08/how-photographers-photoshopped-their-pictures-back-in-1946/

MARKS ON DIALS MUST SHOW

HERE'S WHAT YOU SEE

PART OF PHOTO OF WATCH DIAL

MAGNIFIED AND TIP OF YOUR

BRUSH SNAPPING UP THE

HAIRLINE CALIBRATIONS AND

NUMERALS
http://petapixel.com/2013/05/08/how-photographers-photoshopped-their-pictures-back-in-1946/

Trick #1: diffuser

- Other option: soft focus lens (with increased spherical aberrations)

- Digital version: blur or surface blur

From Corrective Lighting and Posing
Step Six:
To keep from simply painting in a blurry version of our photo, go up to the Options bar and change the History Brush's Blend Mode to Lighten. Now when you paint, it affects only the pixels that are darker than the blurred state. Ahhh, do you see where this is going? Now, you can take the History Brush and paint over the acne areas, and as you paint, you'll see them diminish quite a bit (as shown below). If they diminish too much, and the person looks "too clean," press Command-Z (PC: Control-Z) to undo your History Brush strokes, then go up to the Options bar and lower the Opacity of the brush to 50% and try again.

Before.

After.
Shading and highlighting
Corrective Make Up

• Depending on the shape of the face
• [Link](http://madphotoassistant.wordpress.com/2011/05/13/lighting-title/)
• http://strobist.blogspot.com/2010/05/brad-trent-on-fake-reality-of-portraits.html
Lighting

• E.g. 3-point lighting
  – Reduce dynamic range
  – Emphasize silhouettes
  => 3D cues

• Goals of lighting:
  – Manage dynamic range
  – Reveal shape, layout, material
  – Tell story
Portrait lighting

Main light

Fill-in light

Accent light

Background light
3-light lighting

- http://www.youtube.com/watch?v=gL8mhBtIAco
glossary of lighting terms

Lighting, like any other craft, has its own jargon and slang. Unfortunately, the different terms are not very well standardized. Often the same object may be described in two or more ways or the same word used to mean two or more different things. For example, a sheet of black card, wood, metal or other material that is used to control reflections or shadows may be called a flag, a French flag, a donkey or a gobo - though some people would reserve the term "gobo" for a flag with holes in it, which is also known as a cookie. In this book, we have tried to standardize terms as far as possible. For clarity, a glossary is given below, and the preferred terms used in this book are asterisked (*).

Acetate
see Gel

Acrylic sheeting
Hard, shiny plastic sheeting, usually methyl methacrylate, used as a diffuser ("opal") or in a range of colours as a background.

*Barn doors
Adjustable flaps affixed to a lighting head that allow the light to be shaded from a particular part of the subject.

Boom
Extension arm allowing a light to be cantilevered out over a subject.

*Bounce
A passive reflector, typically white but also, for example, silver or gold, from which light is bounced back onto the subject. Also used in the compound term "Black Bounce", meaning a flag used to absorb light rather than to cast a shadow.

Continuous lighting
What its name suggests: light that shines continuously instead of being a brief flash.

Contrast
see Lighting ratio
Cookie
see Gobo

*Diffuser
Translucent material used to diffuse light, includes tracing paper, scrims, umbrellas and translucent plastics such as Perspex and Plexiglas.

Effects light
Neither key nor fill; a small light, usually a spot, used to light a particular part of the subject. A hair light on a model is an example of an effects (or "FX") light.

*Fill
Extra lights, either from a separate head or from a reflector, which "fills" the shadows and softens the lighting ratio.

Fish fryer
A small Soft Box.

*Flag
A rigid sheet of metal, board, foam-core or other material used to absorb light or to create a shadow. Many are painted black on one side and white (or brushed silver) on the other, so they can be used either as flags or as reflectors.

*Flat
A large Bounce, often made of a thick sheet of expanded polystyrene or foam-core (for lightness).

Fog
see Gel
French flag
see Flag

Frost
see Diffuser

*Gel
Transparent or (more rarely) translucent coloured material used to modify the colour of a light. It is an abbreviation of "gelatine filter", though most modern "gels" are acetate.

Gobo
As used in this book, synonymous with "cookie": a flag with cut-outs in it, to cast interestingly-shaped shadows. Also used in projection spots.

Incandescent lighting
see Tungsten

Ink
dky
Small tungsten spot.

*Key or key light
The dominant or principal light, the light which casts the shadows.

Kill Split
A large flag that is used to block split.

Kino
dinky
Small tungsten spot.

Lighting ratio
The ratio of the key to the fill, as measured with an incident light meter. A high lighting ratio (9:1 or above) is very contrasty, especially in colour. A low lighting ratio (4:1 or less) is flatter or softer. A 1:1 lighting ratio is completely even, all over the subject.

*Mirror
Reflectors are rarely mirrors, because mirrors create "hot spots" while reflectors diffuse light. Mirrors (especially small shaving mirrors) are widely used, almost in the same way as affects light.

Mounting stand
see Lighting stand

Narrowspot
see Soft box

Percaps
A brand name for acrylic sheeting.

Plexiglas
A brand name for acrylic sheeting.

Projection spot
Flash or tungsten head with projection optics for casting a clear image of a gobo or cookie, used to create textured lighting.

Relector
Conical reflector, filling over a lighting head. The light can be reflected back onto the subject. Conical reflectors are also used for small soft-light sources, often for modeling light.

Soft box
Large, diffusion light source made by shining a light through a soft fabric of diffuser. Soft boxes come in all sorts of shapes and sizes, from about 90x90cm to 100x100cm and larger. Some are rigid, others are made of fabrics, with sides resembling fabricating lighting units. Also known as a "nursey" or a "sury", these are used as reflectors to produce softer, diffused light without losing as much contrast as the reflectors.

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Split light
A light that ends up on the subject at which it is pointed. Split may be used to provide fill or light backgrounds. It may be controlled with flags, barn doors or gobos.

Strob
Electronic flash standard head with diffusion (Chimera)
It’s the light that counts

- [http://fstoppers.com/iphone](http://fstoppers.com/iphone)
- Photos taken with an iphone 3GS
  – and a lot of lighting equipment
Hair lighting

The number one complaint from clients with dark hair is how, in many previous portraits, they seemed to blend into the background (A). With all clients who have hair (not bald), we typically use a strip light overhead to add soft separation to the head and shoulders. For someone with long hair like this, we add two accent lights with barn doors at a 45-degree angle, and a final light is placed directly behind the subject’s head. This light is angled back through the hair toward the camera (we call it a halo light). This can cause stray hairs to become very visible (B). In Image C, stray hairs have been reduced by reducing the intensity of the halo light. Sometimes this isn’t enough, and we eliminate the halo light (D).
Butterfly lighting can reduce the apparent size of the subject’s nose.

From Corrective Lighting and Posing
The face, the pose, the colours: all are reminiscent of a Victorian chromolithograph. The effect is achieved in large measure by careful control of the lighting ratio, while retaining as much chiaroscuro as possible.

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**key points**

- Catchlights in the eyes are not essential, but sometimes a picture that is lacking them will look curiously dead.

- Traditional portraitists touched out all but a single catchlight. Today, multiple catchlights are acceptable if they are not too obtrusive.

The key is a snooted spot to camera left, fairly close to the child's face and very slightly backlighting her. Opposite this, to camera right, is a 60x80cm (2x3ft) soft box. This is set to give quite a close lighting ratio, but because it is diffuse and the key light is highly directional, the impression of modelling is very clear; modelling is all the more clear, of course, because of the very careful angling of these two lights.

A white reflector to camera left, just out of shot, provides a little more fill to the front of the face but also creates the catchlights in the eyes. They would not be there otherwise: the key is a back light, and the fill is shaded from both eyes.
susan
photographer Massimo Robecchi

This picture well illustrates that an overcast day can be vastly superior to sunshine, especially if you are shooting in monochrome. With light coming more or less evenly from all directions, the tonality can be exquisite.

Even so, Massimo Robecchi added a white bounce in front of the model to even out the light still further: the white drop of the table-cloth is thereby brought nearer to the tone of the clothes and the background, and the dark stockings are made to read just a little better. This is one of those cases where a collapsible reflector such as a Lastolite or a Scrim Jim can be extremely useful - and where the effect is completely different from fill-flash, touted by camera manufacturers as the answer to everything.
niña detrás de la ventana

photographer Dolors Porredon

A perfect moment, captured by chance - or careful planning? The latter, of course. The window is part of a built set, transilluminated with a 100x100cm (40x40in) soft box, supplemented only by a white bounce to camera left.

key points

- Soft yet directional lighting is often very effective with children
- Flash is usually best for children, as they may screw up their eyes against tungsten lighting
- Some photographers believe that flash can damage the eyes of young children, but there is absolutely no evidence to support this. It seems to be an old wives’ tale

Although this was designed for a poster, the same techniques (and forethought, and organization) could equally be applied to a picture for less public consumption. Window sets are not particularly hard to build; a selection of hats can be kept at hand; the rest of the clothing is hardly elaborate, though the light colour emphasizes purity and innocence; and the lighting is elegant and simple. It is true that, often, surprisingly complex lighting set-ups are used to mimic simplicity; but it is also true that a simple lighting set up can (if it is well executed) be remarkably effective. Diffuse light generally works very well with children, emphasizing the delicacy of their skin texture and the roundness of their features: “character” lighting is considerably more difficult before the features have reached their adult lineaments.
A large assortment of lights contribute to the dazzling look of this beautiful cover shot.

The dazzling smile and gleaming complexion are shown to good advantage as they are bathed in an even spread of light emanating from a virtual wall of light in the form of a series of umbrellas arranged in an arc behind and around the photographer. These all shoot through a curtain of diffusion material, softening and evening the effect on the subject. In addition to this is a key light, a daylight-balanced HMI to camera right, which is the only direct light on the model. It is positioned just high enough to give a gentle amount of modelling below the chin.

On the background are four more umbrellas, one pair on either side. The resulting lightness and evenness of a large part of the final image makes a good background against which the necessary cover text can ‘read’ clearly. A very mottled or light-and-dark image makes it difficult for text to show up well, and this is always a major consideration for a cover shot.
chinese hair
photographer Frank Wartenberg

There is no shortage of lighting equipment here. Frank Wartenberg has assembled an impressive array of soft boxes and silver styro reflectors, above, below and around the camera.

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key points

- Modelling lights are normally tungsten, so bear this in mind when balancing sources
- Silver reflectors will produce more focussed light than white reflectors

The main light is a large soft box (used with the modelling light only) positioned behind the camera. Six smaller soft boxes are arranged on either side and below this, again using only the tungsten modelling light. These combine to give an even sheet of light across the subject.

On both sides is a selection of silver reflectors, effectively forming a wall to either side.

The resulting bright and even background provides a foil against which the strands of the model’s hair, tousled by a wind machine, stand out in stark silhouette.

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From Photographing People, Portrait, Fashion, Glamour
Hardcore Photoshop for portrait

• View before/after
Video of make-up + retouching

• http://www.youtube.com/watch?v=iYhCn0jf46U
Chapter 9 Portrait Retouching

figure 9.47 BEFORE

© Phil Pool

figure 9.48 AFTER
Step Three:
Press the Left/Right Bracket keys on your keyboard to adjust the brush size until it's about the size of the person's cheek. Place the brush near the corner of the mouth (as shown here), click and "tug" slightly up. This tugging of the cheek makes the corner of the mouth turn up, creating a smile.

Step Four:
Repeat the "tug" on the opposite side of the mouth, using the already tugged side as a visual guide as to how far to tug. Be careful not to tug too far, or you'll turn your subject into the Joker from Batman Returns. Click OK in Liquify to apply the change, and the retouch is applied to your photo (as shown).
Step Four:
Press Command-T (PC: Control-T) to bring up the Free Transform bounding box. Hold Shift-Option-Command (PC: Shift-Alt-Control); then, grab the upper-right corner point of the bounding box and drag inward to add a perspective effect to the nose. Doing this gives the person a pug nose, but you fix that in the next step.

Step Five:
To get rid of the “pug-nose” effect, release all the keys, then grab the top-center point (as shown) and drag straight downward to make the nose look natural again, but now it’s smaller. When the new size looks about right, press Return (PC: Enter) to lock in your changes. If any of the old nose peeks out from behind the new nose, click on the Background layer and use the Clone Stamp tool to clone away those areas: Sample an area next to the nose, and then paint (clone) right over it. Below, see the difference our 30-second retouch made in the image.
Hardcore Photoshop for portrait
figure 9.37
Selecting the entire left side of the image avoids potential artifacts.

figure 9.38
Dragging a Free Transform handle to narrow the selected area.

figure 9.39
The Liquify filter's Warp tool pushes pixels forward as you drag.
Step Three:
Get the Push Left tool from the Toolbar (as shown here). It was called the Shift Pixels tool in Photoshop 6 and 7, but Adobe realized that you were getting used to the name, so they changed it, just to keep you off balance.

Step Four:
Choose a relatively small brush size (like the one shown here) using the Brush Size field near the top-right of the Liquify dialog. With it, paint a downward stroke starting just above and outside the love handle and continuing downward. The pixels shifts back in toward the body, removing the love handle as you paint. (Note: If you need to remove love handles on the left side of the body, paint upward rather than downward. Why? That's just the way it works.) When you click OK, the love handle repair is complete.

See also http://www.youtube.com/watch?v=hsiQplt_Y9E
Touch-up: stretc
Untooning

• [http://pixeloo.blogspot.com/2008/04/jessica-rabbit-process.html](http://pixeloo.blogspot.com/2008/04/jessica-rabbit-process.html)
• [http://pixeloo.blogspot.com/2008/03/homer-simpson-untooned.html](http://pixeloo.blogspot.com/2008/03/homer-simpson-untooned.html)
• [http://pixeloo.blogspot.com/2008/04/jessica-rabbit-untooned.html](http://pixeloo.blogspot.com/2008/04/jessica-rabbit-untooned.html)
Landscape
Landscape / architecture

- Get a foreground element
  - rock, tree, flower
- Rule of the thirds, diagonals
  - in particular for the horizon
- Don’t hesitate to zoom in
- Manage dynamic range
  - sky is always too bright
  - graduated neutral density, HDR
  - golden hours or right after sunset
- Use a polarizer
  - darkens the sky, make colors stand out
- Alignments
  - Keep horizon straight
  - For architecture, correct verticals
- Don’t be deterred by stormy weather
- Slow shutter speed for water
Foreground helps
More interesting (foreground)
Parallels: do or don’t
Ansel Adams

- Note foreground trees in lower right
- Sky has been darkened
Equipment
Equipment

- Do get an SLR, compacts are too limited
- Don't worry about brand (with a bias for Nikon/Canon)
- Don't worry about the body, get the cheapest one
- Worry about lenses
  - Zooms are convenient but quality can be a problem
    - Avoid the basic zoom, but the one above is usually great
    - Avoid large range (e.g. 18-200)
    - Maximum aperture matters (the smaller the number, the better)
  - Get a prime in the 35-85mm range
    (cheap, high quality, wide aperture) 50mm f/1.8
- Get a tripod
- Get an external flash if you want to take “event” pictures
  - And orient towards (white) wall/ceiling
  - Good flash photography is very difficult
- Count ~1k for camera+standard zoom+50mm
Nikon

Tends to be a tad cheaper

- D40 & D60 are good. D90 if you want to be more serious
- 18-70
- 55-200 is surprisingly not so bad and super cheap
- Get the 50mm f/1.8
Canon

- Rebel T1i or Xs for cheap options, 40D for more control, 5DII if your bank account permits
- 17-85
- 70-200 f/4.0 (amazing lens)
- 50mm f/1.8
- 100mm f/2.8 macro (great also for portraits)
Other brands

Not as big a range, future not always clear (see Minolta), have been slower to get to digital SLR

- **Olympus**
  - Good system, but smaller sensor

- **Pentax**
  - Good entry camera

- **Sigma**
  - Intriguing sensor (Foveon), limited system, noise is an issue

- **Fuji**
  - One-trick pony (the sensor)
  - Nikon body

- **Sony**
  - Pretty good.
  - Lens selection not as good as Nikon/Canon
Shooting

- Use aperture priority, work on depth of field
- Change your viewpoint
- Don't center things
- Pay attention to background
- Learn to adjust ISO

- Shoot raw
- Check your histogram
Software

• Photo management + lightweight editing
  – Lightroom, Aperture, Lightzone
• Fix white balance
• Crop to improve composition
• Manage contrast using curve and adjustment layers
• Boost saturation (or vibrance) a little. SLRs tend to be neutral
• Add light to dark areas (fill light)
• Sharpen a bit
• Convert to black and white
• Use Photoshop only if you really need to
RECAP
Advice

• Follow rules or really break them
• Simplify, avoid cluttered background
  – move your viewpoint, frame tighter, shallow depth of field, desaturate
• Don’t center things
  – rule of the third, leave space for gaze or motion
• Avoid harsh light
  – Golden hours, overcast days, avoid direct sunlight, go in the shade, fill flash, bounce flash, post-processing
• White balance
• Portraits are all about the eyes
  – Get them sharp, be at eye level
• http://www.nyip.com/ezine/
• http://www.betterphoto.com/home.asp
• Fun interactive demo: http://www.kodak.com/eknec/PageQuerier.jhtml?pq-path=6369&pq-locale=en_US
• http://sd.essortment.com/howtotakebett_rjbg.htm
• http://photography.about.com/library/weekly/aa080502e.htm
• http://www.photosafaris.com/Articles/CompositionsTen.asp
• http://luminous-landscape.com/essays/books-12-03.shtml
Photoshop refs

DVD recommendation

- Visions of light
- Scorsese
Photo books
Photoshop
Art, science & depiction

• Self-promotion:
  – http://people.csail.mit.edu/fredo/ArtAndScienceOfDepiction/
  – http://people.csail.mit.edu/fredo/SIG02_ArtScience/
Cool retouching

- http://medialit.med.sc.edu/aniston.htm
- http://www.eonline.com/News/Items/0,1,12006,00.html
- http://medialit.med.sc.edu/isbmag.htm
- http://www.glennferon.com/portfolio1/

- http://www.fluideffect.com/
  Go to Portfolio, click Agree, then click Before/After.

- http://www.i-am-bored.com/bored_link.cfm?link_id=14537
Ethical issues in retouching