How to Take/Make Better Pictures
Final projects

- N900s
Making better pictures
What do I know about good pictures?

- Not much: amateur photographer, wildlife, travel, portrait
Photography
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.
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
Move your feet! (1 meter away)

Model: Rob Wang

Thursday, March 17, 2011
Distracting background

Model: Rob Wang

50mm f/8
Shallow depth of field

50mm f/1.8

Model: Rob Wang
Shallow depth of field

85mm f/1.2

Model: Rob Wang

Thursday, March 17, 2011
Isolate using blur (Photoshop, layering)

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

Thursday, March 17, 2011
Desaturate, darken

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.

...solution

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.

From Digital Photographer’s Handbook
Thursday, March 17, 2011
Compositing & matting
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
Eye level
Or really get high

• As usual, follow a rule or really break it.
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

Thursday, March 17, 2011
Variations of the rule of the thirds

• Golden ratio
  – Very questionable superstition
  – http://plus.maths.org/issue22/features/golden/

• 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
Build on diagonal lines
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 (perspective crop)

+ you control reflection and perspective independently
Try unusual angles

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

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

Thursday, March 17, 2011
• 10 minutes after sunset
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
Illustrated here are the lighting effects produced by direct, wall bounce, ceiling bounce, and off-camera direct flash. The location and quality of the subject's shadow changes, depending on the flash technique used. Direct flash, although sometimes necessary, produces a harsh image. Bounce flash produces softer light and softer shadows. Wall-bounce flash is similar to ceiling bounce flash with the added benefit of better revealing the subject's shape.

Direct, on-camera flash is harsh and unflattering. Removing the flash from the camera, or bouncing the flash light from a nearby surface produces different effects. Light bounced from a ceiling, although commonly used, causes dark shadows in the eye sockets and under the nose and chin. The most successful technique indoors is to bounce light from a nearby light-colored wall.
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.
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
Lightroom demo

- Most photo editing software lets you click on a neutral object to achieve white balance
  - In “Levels” in Photoshop
  - In “basic” in Lightroom
  - In Adjustments in Aperture
- You also often have presets such as daylight, tungsten
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... or try unusual viewpoints
- Make sure lighting is not harsh
- Shallow depth of field can help
- Add vignetting to focus attention
- Get the white balance right (but maybe a little warm)
- Try to convert to Black and white
- Telephoto to isolate the subject (more formal)
- Wide angle to make him/her approachable and include surrounding
- Don’t hesitate to over-shoot: bits are cheap
Telephoto vs. wide angle

300mm f/2.8

24-70

Thursday, March 17, 2011
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.  
- 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).
Portraits: dirty tricks
• Pascal Dangin [http://www.newyorker.com/reporting/2008/05/12/080512fa_fact_collins](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.


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.
Shading and highlighting
Corrective Make Up

- Depending on the shape of the face
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

Thursday, March 17, 2011
Lightin toys

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 (“spal”) 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, scrim, 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 lowers 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).

Fold
see Gobo

French flag
see Flag
Hair lighting

From Corrective Lighting and Posing

The number one complaint from clients with dark hair is bow, 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 barndoors 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).
Lighting & nose

Butterfly lighting can reduce the apparent size of the subject’s nose.

From Corrective Lighting and Posing

Thursday, March 17, 2011
child
photographer Dolores Porredon

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.

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.
susun
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.

key points

- Exposure is a subjective art: arguably, everything in this picture is just a tiny bit darker than it "really" is, but this holds the tones in the white clothing.
- A 300mm lens, used wide open at f/2.8, allows the background to be subtly suggested rather than too clearly delineated.
- 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 eleganty
simple. It is true that, often, surprisingly
complex lighting set-ups are used to
mirror 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.
smile
photographer Jeff Manzetti

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.
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.

- 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.

From Photographing People, Portrait, Fashion, Glamour

Thursday, March 17, 2011
Hardcore Photoshop for portrait

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

- http://www.youtube.com/watch?v=iYhCn0jf46U
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=hsiQptl_Y9E
Touch-up: stretch
Untooning

- http://pixeloo.blogspot.com/2008/03/homer-simpson-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
References
• 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

- John Shaw's Nature Photography Field Guide
- National Geographic Photography Field Guide: Secrets to Making Great Pictures
- Digital Photographer's Handbook
- Corrective Lighting and Posing: Techniques for Portrait Photographers
- Photographing People: Portraits, Fashion, Glamour
Photoshop

Photoshop LAB Color
The Canyon Conundrum and Other Adventures in the Most Powerful Colorspace

Photoshop
Restoration & Retouching

The Photoshop CS2 Book for Digital Photographers

Thursday, March 17, 2011
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 retoucing

• http://luminous-landscape.com/essays/cloning-the-can.shtml