How to create a visually effective portrait

This is not an illustrated "put your lights here" tutorial on lighting. Instead it explores the variables which combine to make a portrait visually effective and seeks to explain why photographic vision through the viewfinder differs from the way we experience the world with our eyes.

What is a visually effective portrait?

A visually effective portrait is one in which a synergy of tone, color and line between subject, clothing and background lead the viewer's eye from the edges of the photo to the subject's face and holds it there. It is necessary to create a strong contrast between the front of the face and everything else in the photo to accomplish that goal. Anything which pulls the viewer's eye off the center of interest is a distraction. Distractions are the nemesis of a visually effective photograph and learning to spot them is the first step on the path from normal perception to photographic vision.

Why what we see often isn't what we get in a photo

How many times have you looked at one of your photos only to find a glaring distraction you missed completely in the viewfinder when taking it; like that tree seeming to grow out the head of the subject in your first outdoor portrait attempt? Blame your brain and millions of years of evolution which has optimized human vision to search for threats and food. The color detecting cells in the eye, the cones, are located in the center of the retina. The rods on the periphery of the retina are more sensitive to light, but only in a limited range of blue-green wavelengths. The sensitivity of the rods allows us to detect movement out of the corner of our eyes, but when concentrating on an object, in person or through a camera viewfinder, our visual system will "tunnel" in on the object in the center of our vision, tuning out distractions near the edges.

The natural reflex of tunnel vision will cause a photographer to miss distractions at the edge of a photo when framing it in the viewfinder unless they consciously remember to look for them. I find that zooming in tightly on the intended center of interest (COI) – either literally or mentally – and expanding the composition slowly makes it easy to detect when a distracting object enters the edge of the photo. Using "inside-out" cropping helps to isolate and simplify the center of interest, giving it more visual impact.

Photographers are their own worst critics, in part due to latent tunnel vision. Often a photographer will still be so emotionally attached to the memory of how it was taken that glaring distractions on the print will not be noticed or discounted. Learning to be objectively self-critical regarding the technical merits of a photograph is the first step towards making more visually effective images. A well presented artistic statement is more effective that one which isn't.

What attracts the eye?

From a human perception standpoint contrast is the foundation of a visually effective photograph. Human perception studies have shown the lightest area on a dark background or the darkest area on a white one will attract the eye of the viewer like a magnet attracts steel. It is therefore no surprise that the intended center of interest in a visually effective photograph is usually the lightest object on a dark background, or the darkest / most colorful one on a light one.

What key are we playing in? To fit the dictionary definition of "high-key" all tones in a photo must fall within a narrow range of light near-white tones. Conversely, a photo must have only a narrow range of dark tones to accurately be described as a "low key". But if nothing in the photo contrasts strongly with the overall background tone the viewer's eye will not have a visual clue what the most important area in the photo is. I don't use the terms high- or low-key except in the context of describing the background, i.e.; "A brightly lit face on a low-key background will naturally attract the eye of the viewer. "

When we meet people in person their eyes and mouth telegraph emotion and intent: Happy or sad? Friend or foe? Human perception studies have also shown a viewer will seek out the eyes in a photo containing a face. This can create a conflict of interest in a portrait if the eye area in the photo is not the brightest area on a dark background, or the darkest on a white one. The viewer will either be attracted to the dominant tonal area then to the eyes, or make eye contact initially only to be pulled away by a lighter or darker distraction somewhere else in the photo. In either case the tonally dominant area becomes a distraction which diminishes the overall visual impact of the photo.

Try this test: To find the dominant area of tonal contrast in a photo without being influenced by your emotional reaction to the content apply a 10-15 pixel Gaussian blur (enough to obscure the content), rotate it 90 degrees, and then look at it from a few feet away. When the image is converted into an abstract tonal map the eye will be naturally

drawn to the lightest area on a dark background or the darkest area on a white one. If that area does not contain the intended center of interest of the photo that area will be a distraction from it.

Contrast the front of the face with everything else

The front of the face, specifically the eyes and the mouth, are the desired center of interest in a portrait. For maximum visual effectiveness this area of the face should contrast with everything else in the photo. If it doesn't the viewer's eye will quickly be distracted towards the more compelling light or dark areas in the photo.

The strategy for creating contrast between the front of the face and the background is different for dark and light backgrounds. On a dark background making the front of the face the brightest area requires that the clothing and background be darker in tone than the face. On a white background making the front of the face the darkest most colorful area will attract the viewer to it.

Clothing an important factor

Clothing and background should blend harmoniously with each other but contrast with color and tone of the facial area. If the clothing of the subject cannot be controlled it must drive the selection of the background and lighting style.

Clothing can create the greatest potential distraction from the face of the subject in a portrait. For example, a white shirt on a dark background will overpower the face regardless of how effectively the face is posed or illuminated. However the same shirt would be ideal for a portrait on a white background.

Depicting three-dimensional objects with a two-dimensional medium

Before jumping into lighting scenarios it is important to understand why they are even necessary. When viewing a face by eye our stereoscopic vision allows us to discern it's shape in any light. In a photo the perception of depth is entirely an illusion created in our brain by evaluating patterns of highlight and shadow and near-far size relationships against a memory map of objects we've seen.

Three variables come into play when creating the illusion of depth and shape in a portrait. Facial angle and lens perspective will both affect the near-far size relationships perceived in the image by the viewer. Lighting creates the tonal contour map which is the primary clue the brain uses to discern shape in a photograph.

Facial Analysis

Not all photographs of people are intended to flatter the subject. In fashion the model is often secondary to the clothing. If the subject is a punk rocker with an edge the desired look may be a less than flattering hard edged look. Regardless of the desired look in a portrait, learning how to depict the appearance of a person in the most attractive way possible serves as a useful benchmark for what ever direction you wish to take it from there creatively.

Beauty is subjective but tests in which people are shown random full-face photos of various facial types and asked to rate their appeal reveal that a slim face with well defined cheekbones and symmetrical features is considered by most to be the epitome of attractiveness. Not surprisingly the faces of many top models have these characteristics. The general population is not so fortunate.

All faces are different and there is no magic formula such as a 2/3 or 7/8 view which can be applied to make everyone look their best. Most faces are asymmetrical to varying degrees and the challenge for the portrait photographer is to find the most flattering view of the face; the subject's "best" side.

The face has many different intersecting flat and curved surfaces which create highlights and shadows. The two features which are the main barometers for how the facial angle and lighting are modeling the face are the eyes and nose. It is necessary to get light down into both of the eyes to ensure good eye contact and position the light in a way which puts the nose shadow where it is not a distraction. Other key facial landmarks are the cheekbones, jaw angle from front to back and the appearance of the chin on either side of the mouth.

The best strategy for finding a natural looking appearance which reveals the three dimensional shape and character of subject is a slow 180-degree tour of their face from ear-to-ear under flat light. If a subject faces directly into a light placed behind the photographer and then slowly turns in mug shot fashion from full face to each profile it will be possible to quickly evaluate and analyze the face and determine the most flattering facial angle. The height of the camera relative to the subject affects the appearance of the nose. Keeping the camera above the subject's eye line will reveal the more attractive top side of the nose instead of the nostrils.

Because the world moves around us in constant motion we tend not to pay much attention to facial angles. But a still photograph freezes a moment in time, causing things like bits of cheek or ear sticking out in odd ways to become

very noticeable and distracting. In art and photography, three precise views – full-face, oblique and profile -- have proven to be the most flattering because they eliminate such distractions and make the face appear more symmetrical and attractive.

Full-Face: The face when viewed from the front through the single lens of a camera appears flat and oval because cheekbones and nose blend into the similarly toned skin on the face and sides of the head behind them. A full face view makes any facial asymmetry very obvious. Because the full face view is so unforgiving it is best suited for subjects with slim symmetrical faces and prominent cheekbones. Precision is required when using a full-face pose because a face captured slightly off center will give even a perfectly symmetrical face an unflattering asymmetrical appearance in the photograph.

Oblique: As the camera moves around to the side from the center line of the subject's nose the stacked planes of the face are revealed obliquely. The shape of the nose, far eye socket and cheekbone become apparent and the ear on the far side starts to disappear from view. When the viewing angle matches the receding angle of the jaw line the parts of the of the head visible beyond the eye, which create the wide appearance in a full-face view, will disappear revealing the cheekbone and eye socket in profile against the background. Elevating the camera above the eye line of the subject renders the tip of the nose and top of the nostrils as a very eye pleasing compound "gull-wing" curve.

The viewing angle where the side of the face disappears from view defines a dividing line between the front and side of the face which is very significant in portraiture because it reveals the shape of the eye socket, cheekbone and chin line. Together they form a very eye pleasing compound curve from eye to chin which makes the face appear shapely and much slimmer than when viewed full face.

Variations in facial geometry require the photographer to use subjective judgment to find the most pleasing balance between the roundness of the cheekbone, the size of the nose and chin line beyond the mouth and the profiling of the eye socket. For example if a person has a face which is wide near eyes but very narrow at the chin striving for a precise profiling of the eye socket may result in a chin which appears too thin and asymmetrical.

Find the "best" side: An asymmetrical face will usually have one oblique view which is more flattering than the other, which is why evaluating a subject from profile-to-profile before entering the studio and setting the lights is important. When shooting the photographer must get

beyond "tunnel vision" on the front of the face to spot and eliminate potential distractions resulting from imprecise facial angles such as stray hair, tips of the ear, or dangling earrings hanging out past the far edge of the face.

Profile: A classic profile view is how faces are rendered on our coins; nothing visible past the centerline of the face. It is not a commonly used facial view nowadays, but can be very effective when a facial defect or deformity make a full-face or oblique pose less flattering. The exercise of examining a subject's face from ear-to-ear reminds the photographer not to overlook this posing option. As with the other angles precision is important. Imprecise profiles with part of the brow or eyelash visible beyond the centerline create distractions.

Distance Perspective

It is a commonly held misconception that focal length changes the size relationship of objects in the foreground and background of a photograph. Actually it is the relative distances from the near and far objects to the camera, not the focal length of the lens, which affects how they are rendered. This can be easily demonstrated by viewing one's own face in a mirror. When the face is placed an inch away from the surface the nose appears very large in relation to the rest of the face because the nose is two to three times closer. As the distance from the mirror increases the distances between the tip of the nose and ears relative to the mirror becomes progressively more equal and the appearance of the face becomes more normal looking. What role does the focal length of the lens play? It simply allows the photographer to control the cropping of the subject in the camera from the optimal viewing distance from the subject.
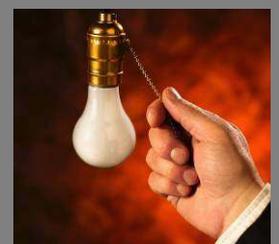
As with other variables in portraiture the ideal distance for making a portrait will depend on the shape of the face and the facial view, but 7-10 feet is a typical range for a head and shoulders view. As with the facial angle, the photographer should view the subject's face through the camera lens from various distances to determine the most flattering perspective. Once the distance is determined the camera format and desired cropping will determine what focal length is needed.

For a more in-depth discussion of distance perspective and cropping factors see Doug Kerr's article in the 2nd issue of PBase Magazine.

Lighting the Human Face

Three key points to remember when lighting a human face are: *1) light the entire photograph to make the front of the face*

contrast with everything else so it is easy for the viewer to find it and make eye contact with the subject; 2) put the nose shadow where (anywhere) it doesn't become a distraction, and; 3) treat everything in the photo other than the face as part of the background which should contrast with and lead to the face.

We immediately try to make eye contact with the people we meet and interact with so it's no surprise that the eyes are the most logical focal point in a portrait, with the mouth which telegraphs mood and emotion a close second. It is therefore extremely important to devise a lighting strategy which will make the eye and mouth area contrast with everything else in the photo. If it doesn't the viewer's eye will be tempted away by distractions and the photo will have less attention grabbing visual impact.

Facial contrast on a dark background is created by making the area around both eyes and the mouth the brightest area in the photograph. On a white background the tonal balance is the opposite and the eye will be pulled towards the darkest and most colorful areas. On white the most visually effective lighting strategies for creating contrast between the face and background make the front of the face warmer and more saturated than anything else in the photo. Because a white background creates such sharp contrast with everything else, very careful attention must be given to potential distractions which will divert the viewer from the face.

Clothing has the greatest potential to overpower and distract attention from the face of the subject, so it is best to determine a clothing and background strategy before considering how to light the face.

Dark clothing strategy:
Dark clothing → Dark background → Front of face lightest area in photo
If the clothing of a subject is darker than their skin tone the background should also be dark so there is a tonal pathway which leads from the darker empty edges of the photo, across the slightly lighter clothing, to the brightly lit front of the face. When viewed obliquely the side of the face toward the camera should be <u>darker</u> than the far side of the face (i.e., short lighting). Other skin tones such as arms and legs should be covered with clothing, placed in shadow or moved out of view of the camera to eliminate them as distractions from the face. Hands when visible and not located close to the face should be significantly darker than the face and turned sideways to the camera to minimize their apparent size. Everything should lead the eye of the viewer's eye to the brighter front of the face and nothing should distract from it.

The light background strategy:

Light clothing → Light background → Front

of face darkest area in photo

If the clothing of a subject is lighter than their skin tone the background should also be light to create a tonal pathway which leads from the bright empty edges of the photo, across the slightly darker white or cool pastel clothing, to the saturated warm tones on the front of the face. The side of the face when viewed obliquely should be <u>brighter</u> than the far side of the face which is profiled against the background (i.e., broad lighting). Exposed arms, legs and hands are all potential distractions from the face and should be covered with white or light clothing and illuminated to make them lighter and less visually appealing than the front of the face on the white background. Everything should lead the eye of the viewer to the darker, warmer front of the face.

Other considerations on white background

Bright colors and dark tones will attract the most attention. If the subject is fair haired the contrasting warmth of the hair and color of the eyes will be the source of visual attraction towards the face, which is why it is extremely important to avoid anything darker or distracting in the photo. In an extreme close-up of a fair-haired subject the colorful irises and pupils of the eyes and colorful lips will dominate both tonally and visually.

If a subject has dark hair it's strong contrast will immediately pull the eye of the viewer towards the face. A good strategy for a subject with long dark hair is to frame the face with it. Because this attraction is so strong the photo should be composed so there is enough white background beyond the hair to create a visual buffer between it and the edge of the photo. In extreme close-ups, dark hair at the top or side of the photo can create a distraction which will put the eye of the viewer towards it and out of the photo. But a dark haired subject makes it feasible to use darker clothing in close-ups if the photo is composed so the dark hair and clothing balance each other visually, framing the face in the middle.

Balanced combinations of dark or bright colors on a white background have a curious effect on human perception. Put a red hat on a subject and it will be a huge distraction from the face. But put a red hat and an identically colored shirt on the subject and the distraction will disappear because the eye will tune out the red color and be attracted to the contrasting face in the middle.

Lighting a face is different than lighting an egg

The best way to reveal the shape of most objects is to place the key light behind and to the side of it and then shoot from the front into the shadows. Consider the appearance of a flat-lit full moon vs. a crescent moon. A full

moon is flat lit from the front and perceived as a flat disk, while a crescent moon is illuminated from behind and perceived as a spherical ball shape in our mind's eye.

When a human face is photographed on a dark background light is needed on the front of the face to create contrast and reveal the details of the eyes and mouth. Unfortunately frontal lighting also creates a sundial-like nose shadow from the nose which can become a huge distraction if not aimed intelligently by the photographer when positioning the key light. In fact, hiding the nose shadow where it will not be noticed is one of the biggest challenges when lighting a face on a dark background.

Getting a flattering lighting pattern on the face on a dark background isn't rocket science, it just requires getting light in the eyes and hiding the nose shadow somewhere it doesn't become a distraction. Just as a sundial tells the time with it's shadow, the nose shadow can tell the photographer how effectively the key light is positioned. If the key light is too far back around and low relative to the centerline and bridge of the nose, the shadow from the ridge of the nose will fall sideways into the opposite eye socket and the shadow from the tip will cross onto the cheek. If the key light is too high the brow will shade the eye sockets and the shadow from the tip may cross over the lip.

On a white background, lighting a face is even simpler; just contrast it's color with the white background and eliminate any other darker distractions. On a white background the eye will be attracted to the darkest / warmest area in the photo. Placing the front of the face in the shadow side of the lighting created by the fill makes it the darkest area in the photograph if the clothing is light and non-distracting and the brighter key light is used to make distracting body parts like the ear in an oblique view blend into the background.

Lighting Patterns

There are many different classic lighting patterns which you can find described and illustrated in on-line tutorials or in any book on portraiture. It's not my intention to re-plow the same ground. Instead I'd like to stimulate insight regarding what makes each one effective on dark and light backgrounds so you will be able to make your own informed decisions about what is visually effective instead of imitating what some dead painter used. For the sake of simplicity I'll focus on three basic styles: short, broad, and butterfly. Most of the other popular styles such as loop and Rembrandt are variations of short lighting.

Terminology: The terms "short" and "broad" derive their name from the portion of the head the key light illuminates when the face is positioned obliquely or in profile to the camera. In a full face pose there isn't any broad or short aspect to the key light, it is just on one side or the other. It is

only when the head is turned obliquely to the camera the front of the face becomes the "short" side and the "broad" side faces the camera.. Butterfly lighting derives it's name from the pattern of the shadow the key light creates directly below the nose when aligned with it.

Short lighting: Short lighting puts the key light on front of the face and in both eye sockets. Regardless of which way the subject's face is pointing relative to the camera (i.e., full-face, oblique, or profile) the key light is placed about 45 degrees to the side of the nose and 20-30 degrees above the subject's eye line. In a short lighting configuration the shadow from the ridge of nose will ideally fall down along the side of the nose, not into the eye socket or cheek and the shadow from the tip will fall downward at angle over the top of the nostril or along the crease between the cheek and mouth where it will not be as noticeable. How the nose shadow falls varies with the size and shape of the nose and the position of the key light. Getting the most flattering combination of highlight pattern on the cheekbones, light in the eyes, and a non-distracting nose shadow is a judgment call by the photographer, which is why people are willing to pay big bucks to record their visage for posterity in a flattering way.

The short lighting is very effective on dark backgrounds with dark clothing because it makes the front of the face the brightest area in the photo, especially the far side which is closest to the light and revealed in sharp contrast against the background. It puts good light in both eyes and places the distracting ear facing the camera into the shadows.

> *An oblique facial angle with short lighting is one of the most flattering lighting styles on a dark background because the oblique pose reveals the shape of the far side of the face and the pattern of light mirrors that shape with the highlight/shadow pattern from eye-to-chin on the opposite (shadow) side. Even though the face is turned sideways the lighting pattern on the front of the face makes it appear symmetrical, even if the face actually isn't.*

Short lighting combined with an oblique facial view is not visually effective on a white background because the brightly lit far side of the face closest to the key gets lost against the white background and the viewer's eye is drawn to the darker side of the head and ear instead of the front of the face.

Broad lighting: Broad lighting on an oblique view of the face puts the key light on the side

of the head and ear facing the camera. It is not effective on dark backgrounds because it splits the face and places one eye in shadow drawing undue attention to the brightly lit ear. Because the key light is aimed at the ear and hits the face flatly on the side facing the camera there is no modeling of the features and the shadow from the nose will fall into the far cheek and eye. On a dark background an oblique view of the face with broad lighting will make a face appear very wide and less attractive than the same oblique view with short lighting. The exception is a narrow face which will usually appear more flattering in broad light compared to short lighting.

On a white background low ratio (light shadowed) broad lighting combined with an oblique view of the face is very effective because the darker far side of the face contrasts with the background. The viewer's eye will be drawn from the white edges of the photo, across the brightly lit side of the face to the darker front side where the eyes and mouth are.

Butterfly lighting: Butterfly lighting is achieved by aligning the key light directly in front of the subject in line with the nose and high enough to create a downward shadow under the nose and cheekbones, but not so high that the brow casts a shadow into the eye sockets or the nose shadow becomes too long and distracting. It is used most effectively for full-face views, but because full-face views tend to make the face appear flat and wide and telegraphs asymmetry it works best with narrow symmetrical faces with well defined cheekbones. It is also useful in situations where directional lighting scenarios would create unflattering broad lighting or distracting shadows on the face, such as young children and large randomly arranged groups where the orientation of the subjects to the key light cannot be precisely controlled.

The Supporting Role of the Fill Light

The role of the key light in a portrait is to create the highlights and shadows which create the illusion of depth, the third dimension in a two dimensional print or screen image. The role of fill is to simply lighten the shadows created by the key light to match the tonal range the camera can record. In other words the source of the fill, whether a light source or a reflector, should not create it's own visible highlights and shadows, or adversely influence the modeling of the key light.

Many beginners, without giving the role of fill much thought place it exactly opposite the key light where it works against and cancels it's modeling creating unflattering cross shadows and dark voids in areas where the nose shades the key light and the cheek shades the fill.

The only position where a fill light will evenly illuminate <u>everything</u> the camera sees is near the camera axis. A fill light placed near the camera lens is called "neutral" fill because it is non-directional and does not influence the

modeling pattern of highlight and shadow created by the key light. Neutral fill falls off in intensity from front-to-back on the subject, helping to create light / dark contrast on the front of the face helping things like distracting ears fade into the shadows. When a fill source is moved off the camera axis on a dark background the side of the head and ear will become too bright and distracting specular highlights from the fill may appear in the shadows.

On a white background the "fill" light near the camera axis becomes the primary source of frontal lighting for the front of the face, with the highlights on the subject used to brighten distractions and blend them into the background. A scenario for lighting a subject on a white background would typically consist of four or five lights: two to evenly illuminate the white background, one near the camera to evenly illuminate the front of the subject, and one or two lights behind and to the side to create shape defining highlights on the edges of the subject's face and torso.

Getting started in portraiture – No lighting equipment required:

In a studio setting with a fixed background and movable lights it is necessary to first pose the subject relative to the background and position the camera in front of it, then move the key light relative to the subject's face to get the desired lighting pattern for that angle of the face. A different facial angle will require movement of both the subject and the key light. All that movement of lights and subject and camera at different angles can get very confusing for a beginner. Making matters more confusing is the fact that most lighting tutorials use the camera axis as the reference point for setting light angles relative to the subject.

Because there are so many variables with artificial studio lighting I suggest beginners learn using the soft indirect light from north facing window (south-facing window south of the equator) and a reflector. You can't move the window, so that eliminates one variable. To change the lighting pattern on the subject's face it is necessary to turn the subject toward the window. Turning the subject's face about 45 degrees towards the window until light is in both eyes and on both cheeks but not spilling past the eye socket on the shadow will produce a very flattering short lighting pattern on the face. A reflector is then moved in from the front on the shadow side to lighten the shadows.

The photographer will quickly realize that once this lighting pattern on the face is established it's simply a matter of moving the camera position to find the desired facial angle and that regardless whether the view is full-face, oblique, or profile the angle of the subject's nose to light source remains a constant angle of approximately 45 degrees

regardless of which way the nose is pointing relative to the camera axis. Because of this constant relationship between nose and key light for short lighting I use the centerline and bridge of the nose (eye line) as the zero coordinate or "compass rose" when discussing lighting angles, unless camera axis is specifically mentioned.

The skills and short lighting pattern learned by window light simplifies things when using artificial lights. Pose the subject to the camera for the desired facial view, then move the key light relative to the "compass rose" of the nose for the desired short lighting pattern.

Summary:

From a presentation and tonal standpoint portrait lighting is an exercise in eliminating distractions to isolate and simplify the center of interest; the subject's face. Lighting a portrait so it is visually effective is nothing more than practical application of the visual dynamics of human perception. A portrait should allow the viewer to make eye contact with the subject(s) in the photo, whether they are looking directly at the camera or not, and reveal them in the most flattering, attractive manner. Visually effective presentation of the subject in a portrait requires contrast between the front of the face where the eyes and mouth are located and everything else in the photo. Creating this contrast requires thoughtful coordination of the clothing, background and lighting. Because clothing is the greatest potential distraction the choice of light or dark backgrounds should be predicated on having clothing and background coordinate together so both will contrast with the front of the face of the subject. Only after the clothing and background are selected can the lighting strategy needed to contrast the face of the subject be determined. When done effectively the viewer's eye will be drawn in from the bottom edges of the photo, in and up to the top center where the eyes and mouth are located, and not be distracted to other unimportant areas.