INDEX

INDEX

Composition Propositions

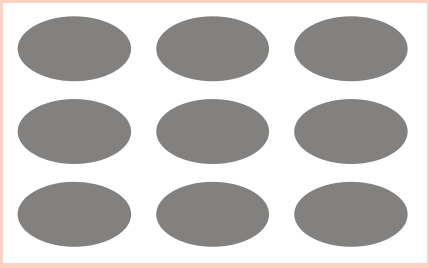
echnique visual perception

An A-Z guide on visual concepts for photography, graphic design, advertising and fine arts

A

When viewing an area with shapes of equal value the eye finally rests on the shape placed nearest to center.

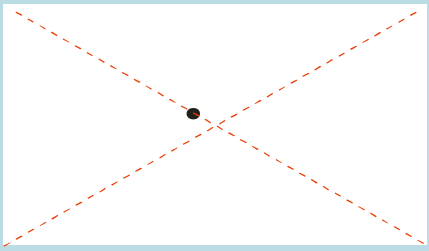
When viewing our apples, the eye will eventually rest on the center apple even though some of the other apples are more interesting and a fraction smaller or bigger. This principle is tried and tested in display advertising - the biggest special will be placed in the middle of a knock & drop advertisement.



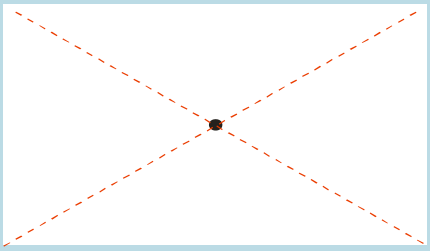
B

The static or optical center point is slightly to the left and top of the real (physical) center point.

This is true for the westerner, we read from left to right and top to bottom. When a point is placed in the physical center of a page it has an uneasy notion to the right and a little down. Try to place a point on the center of a sheet of paper and cross the paper from corner to corner to see how accurate you are.



static center point

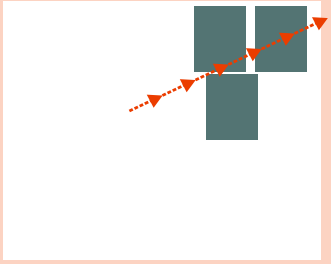


physical center point

C

Any shape that's off the static middle point gives movement away from the middle point towards the outer edge.

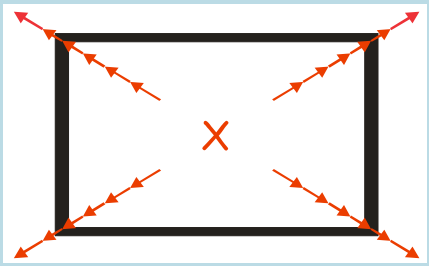
This proposition is even more pronounced when the shape is closer to a corner. Identify this forced movement in magazine display advertisements where the shape is placed close to where the product is displayed, most likely at the bottom right of the advertisement.



D

The corners of a rectangle form "arrows" away from the center - attention is on the center point. Thus, it creates equal gravity or stretch.

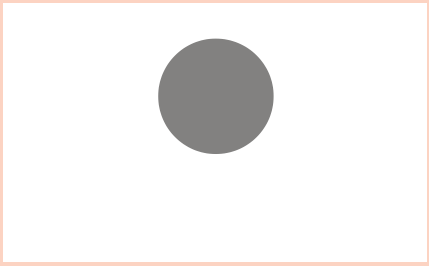
A rectangle should not be confused with a square which has equal sides, a square creates a totally different eye movement. Rectangles are the easiest format to keep the eye in the center area of an image, especially a vertical rectangle.



E

Symmetrical shapes in a static position is at rest.

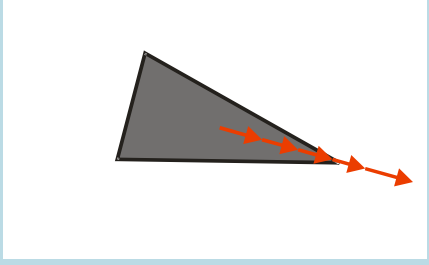
Be careful with symmetrical shapes with less than six points since they might become direction indicators depending on the eye movement.
Symmetrical shapes are very popular in the east, the Japanese flag, etc. Eastern products like sushi is safe to present in a symmetrical composition - keep it simple.



F

An irregular shape implies movement to the thinnest or furthest point (it forms an "arrow")

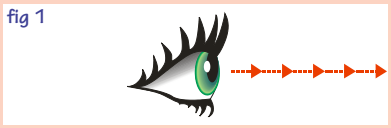
Shapes leading the eye into a specific direction is referred to as direction indicators. An irregular star, triangle or even an egg shaped oval will generally become direction indicators.

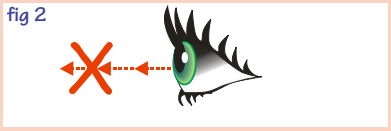


Technique visual perception

N Like shapes, forms can imply direction because of their inherent or subjective value.

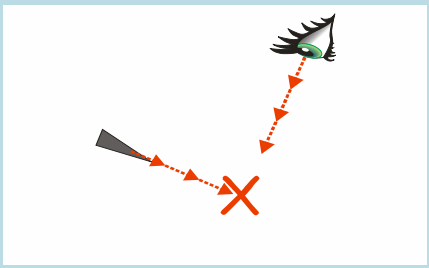
A form that implies direction to the right will force the viewer to follow this direction and probably stop outside the page or picture fig 1.
A form that implies direction to the left will stop the viewer's natural movement from left to right and will create a static/energy point within the page or picture area fig 2.





O Shapes & objects indicating direction lead the eye to their point of intersection.

This is a very strong way of emphasising a focal point since more than one form (direction indicator) is employed to force the eye to an intersection.
A stronger focal point can be created by adding other propositions like bending a line (proposition J) as in the example, the bent arm.



P The weight of a symmetric shape can force focus onto itself.

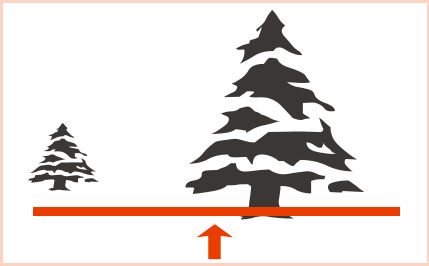
Should a darker shape which focuses the attention onto itself be off center, it could force the eye into its direction away from the center of the image and even make the eye leave the image all together.
Colour can play a role in determining the weight of an image.

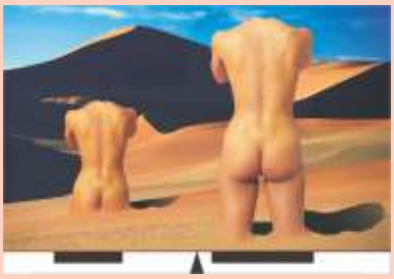
Q An implied negative form implies the form and is as strong as the form itself.

To successfully imply an image is a very strong form of visual communication since it employs more of the viewer's imagination.
The form that is implied holds its own subjective value. In our example a circle is implied (static when placed in a symmetric position proposition "E").

R Shapes balance at a mean point from the center of a picture for good composition.

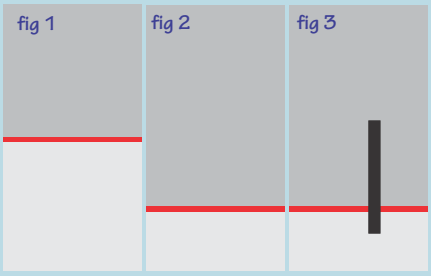
This age old principle is one of the most important propositions and applies to almost all good images.
Balance is conditioned in our minds, good balance puts the viewer at ease. Remember colour, and not just volume, has variable weight.





S A line horizontally crossing the area in the middle divides the picture in two halves fig 1.

A line dividing an area off-center will emphasize one of the two areas, dividing the image much less and allows a better visual introduction into the picture fig 2.
Crossing the division line or horizon with vertical lines will marry the two areas even better fig 3.



T A line vertically dividing an area will have similar results to a line dividing horizontally.

Scanning a page from left to right also plays a role in this proposition, the right hand side should block the viewer from leaving the image.

Colour value

Science colour

Colour refers directly to light. Colour, however, is a lightwave with a specific motion or wavelength. Different colours would then have different wavelengths. The visual spectrum is all wavelengths which can be seen as light. The waves that represent the visual spectrum falls approximately between 400nm - 700nm fig 2 (below).
Nanometre = nm, an SI unit of length, equal to 10^{-9} m (one millionth of a millimetre) Formerly, millimicron (symbol mμ) was used for the nanometre.
The **slower visual wavelength is 700nm** (see fig 1 on the right for explanation on why 700nm is slower than 400nm) and falls in the red spectrum. Infra red is a wavelength slower than 700nm and falls outside the visual spectrum. The fastest visual wavelengths are 400nm, the violet spectrum, ultra violet (popularly known as black light) is faster than 400nm and falls outside the visual spectrum.

fig 1

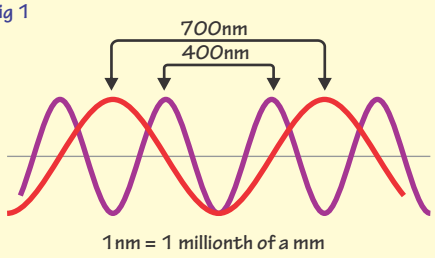
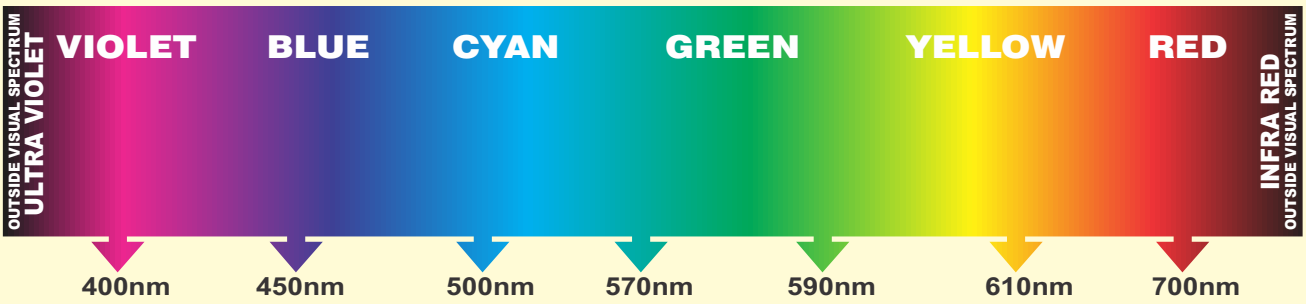


fig 2



There are three basic colours which scientists use with which they can mix white light - we refer to them as the three primary colours:

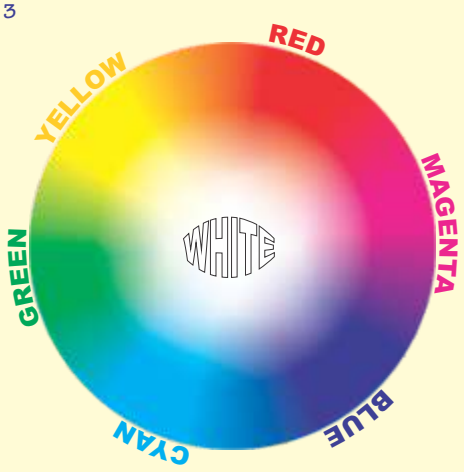
BLUE GREEN RED

The other basic colour combination is:

YELLOW MAGENTA CYAN

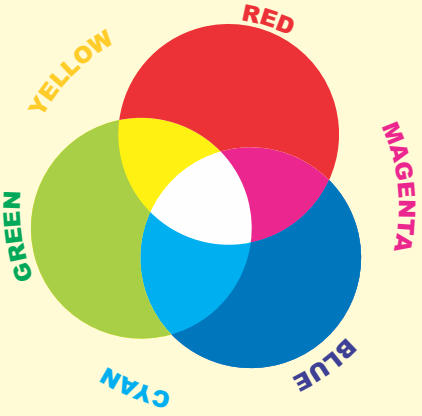
popular for its use in the printing industry together with **black** which is referred to as "**K**" in **YMCK** (**K = Key colour** which has to be added to other colours to darken them or to create a solid black). The easiest way to understand and control these colours, are by means of a colour wheel fig 3.
Subtractive colours are scientific colours, mostly concerned with light projection and mix quite differently to additive colours used in painting (pigments).
Green and red will mix to yellow with subtractive (light beams) colours fig 4, whereas green and red will mix to a plummish colour with additive (paint) colours fig 5.

fig 3



Colour wheel (subtractive colours), note that all colours of the rainbow mix to a white

fig 4



Projected primary colours and how they mix, The mixes relate directly to the colour wheel

fig 5

Additive colours (pigments) which fine arts artists are concerned with

When light passes from one translucent surface to another, it bends towards the angle at which it reaches the surface.
A stream of white light (light beam) will break up into the rainbow colours consisting of the visual spectrum. The slower rays (the reds and yellows 600nm-700nm) will bend more than the faster rays (blues and violets 400nm-500nm).
Infra red bends the most and when using infra red sensitive film, special focus adaptions need to be made on the lens. The visual colours focus on a different plane to the non visual infra red colours.
Should we view this phenomenon in reverse, it is easy to understand the principle that all the colours from the visual spectrum together create white light fig 6 & fig 7.
Scientifically, black is not a colour but the total absence of colour fig 8.

fig 6

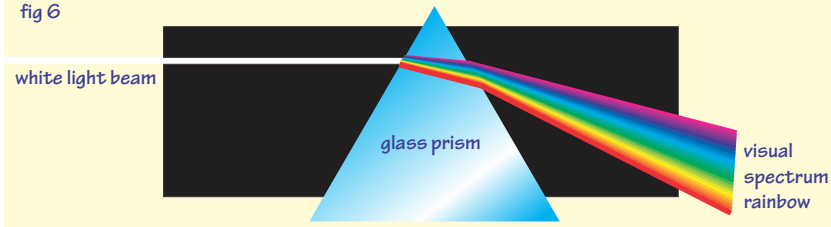


fig 7

a combination of all colour rays of the visual spectrum will project as pure white

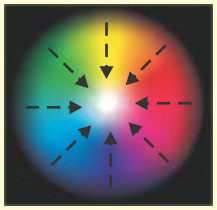
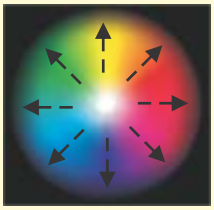


fig 8

an absence of all colours of the visual spectrum will appear black or will be totally dark

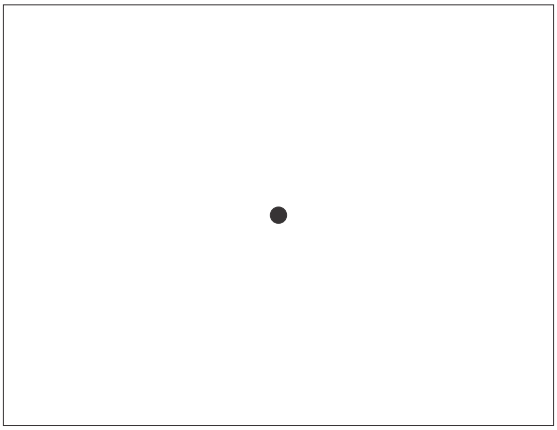


Philosophy on colour

Suppose that the country of the blind had a college of science. It would not be beyond belief that its sightless savants should discover the existence of sight in lower animals. The range of electromagnetic radiations would be discovered sooner or later, and so eventually would the facts that animals show a sensory response to certain wavelengths, and that this depended on certain facial organs whose purpose had hitherto been a complete mystery. The researchers might even invent a scientific term meaning "light" - the sensation produced by the stimulation of these organs by electromagnetic radiation.
However, it seems impossible to imagine that they could ever arrive at the notion of colour in this way.
Colour is something qualitatively different from the concepts with which we have so far been concerned.
To talk about the difference between red and blue without reference to our perception of them is meaningless. Red and blue are different sensations, not different degrees of a similar sensation. The stimuli which give rise to them are something different.

Practical colour physics

Focus on spot in left hand block for one minute then move the eye to spot of block in right hand side bblock.

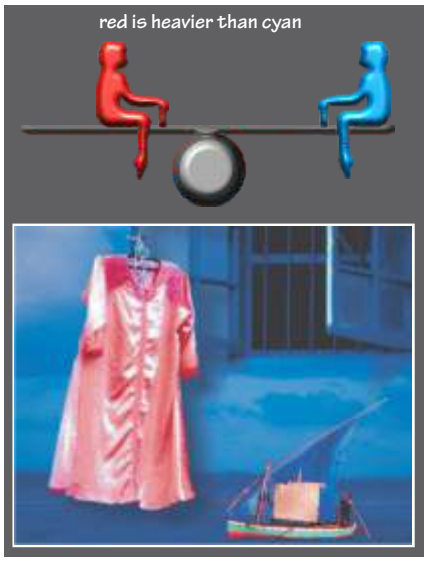


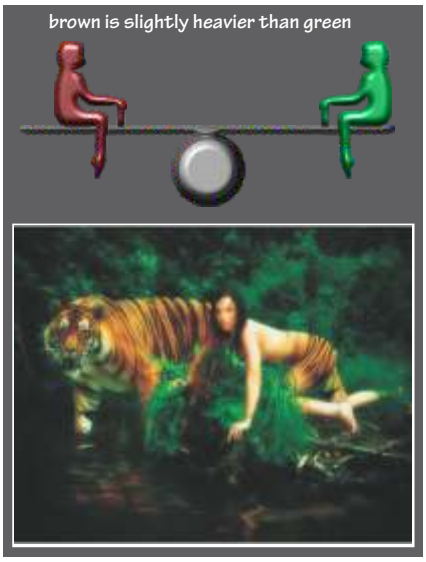
The photo on the left has the negative colour value of the real image. When moving the eye to the right, the optical sensors' fatigue imprinted the negative colour values which are the true colours of the image. This practically proves complementary colours on the colour wheel.

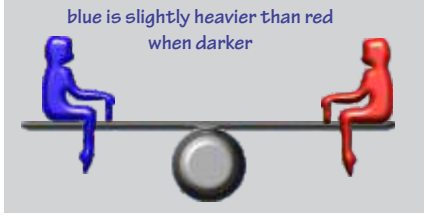
Technique colour in composition

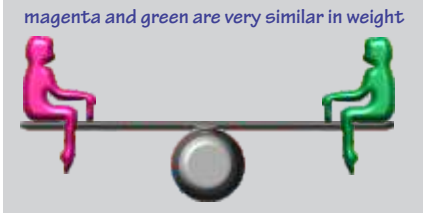
The Weight of Colour

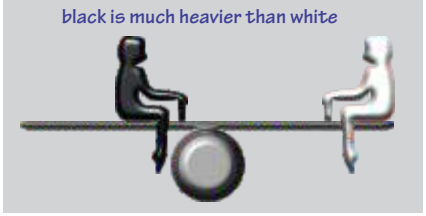
Colours also have a feeling of weight in relation to one another.











THE STUDIO

Photo: Hein Waschefort

Different lights play different roles in the set-up of proper studio portrait lighting.

1. **The Studio Flash key-light** should be the most powerful studio flash head and mostly (but not always) used with a soft-box or umbrella. More dramatic lighting like Rembrandt- and rim-lighting is often better handled with a snoot or barn-door as **key-light**.
   The Tungsten key-light (real-time lighting) must be a high intensity bulbs seated in parabolic reflectors or barn-door - 250-500 Watts is sufficient for a small room.
2. **The Studio Flash fill light** can be somewhat weaker than the key-light and can be a soft-box, umbrella, very weak barn-door or reflector.
   The Tungsten fill light should be equipped with a diffuser, which could be nothing more than a piece of frosted plastic or acetate in a screen that mounts over the reflector. When using a diffuser over a light, make sure there is sufficient room between the diffuser and the reflector to allow heat to escape.
   The **fill-light** could have barn doors attached to hide radial rays from creating glare in the lens (much the same purpose as a lens hood).
3. **The Studio Flash hair-light**, is a weak light. Ideally a barn-door or snoot, these lights are directional and prevents glare. A camera flash-gun can work well and is easy to hide behind the model.

A youthful Amanda de Waal was treated with the full Monty (Apart from good make-up).
Photo was taken on 6X6 (Hasselblad) which assisted in creating great tonal range together with the balanced use of studio lighting. I worked towards a soft feeling to enhance Amanda's youthful look.

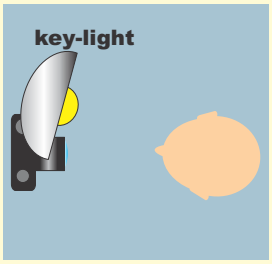
The Tungsten hair-light can be a scaled-down reflector with a lower-wattage bulb: 125-250 watts. Barn doors are a good idea to illuminate glare, remember glare can also ad to a portraits pictorial value.
I have had good results using a mirror to reflect the key-light from behind onto the hair.

4. **The Studio Flash background-light** fittings vary, should one want a spot behind the portrait a snoot would work well, a more evenly lit backdrop needs a wider light source, in this case a camera flash-gun with a wide adjustment can be used.
   The Tungston background-light similar to hair light but directed to background.
   I sometimes use a colour filter on background-light to change the colour of a back-drop.
5. **Kicker-lights** are optional lights used very much like hair lights mostly used behind and from the sides of the subject, producing highlights on clothing and side of face. Ligtens smoke when directed into it, filters on kicker-light changes colour of smoke.
   For **Kicker-lights** I like using camera flash-guns on small tripods; it is inexpesive, easy to hide and a great variety of 'sample' colour gel filters can be stuck onto it.

Flash light meter, light reading for studio flash is done with specialised flash meters (on left) which measures the light at the moment the flash is triggered. The flash measures incident light value, which is of course very accurate and light and dark subject matter will not influence the reading. Camera speed should normally be the suggested camera flash sync speed. I normally use 1/125 sec. since some of the older studio flash units and very powerful units are not as fast as the smaller modern flashes, all modern cameras will sync at 1/125 sec.

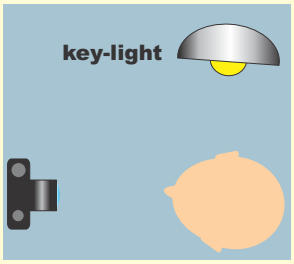
BROAD AND SHORT LIGHTING There are two basic types of portrait lighting.

Broad lighting means that the key light is illuminating the side of the face turned toward the camera. Broad lighting is used less frequently than short lighting because it tends to flatten out and de-emphasize facial contours. It is often used to widen a thin or long face.

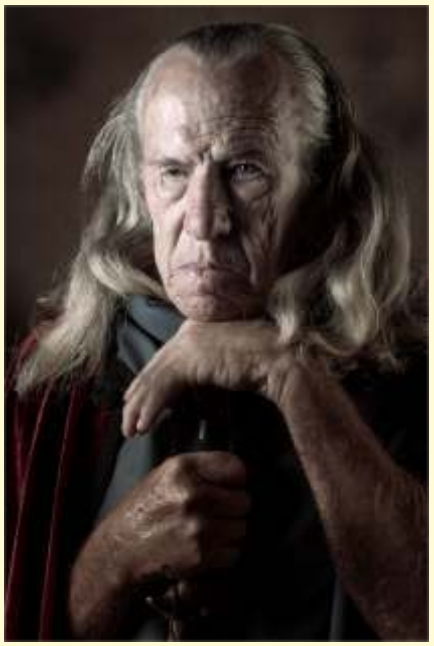


Broad lighting makes the face appear wider than it really is because so much of the face is highlighted. In this photo I took of 'Megan' the broad light reflects an open face portraying the innocence of a child.

Short lighting means that the key light is illuminating the side of the face turned away from the camera. Short lighting emphasizes facial contours, and can be used as a corrective lighting technique to narrow a round or wide face. When used with a weak fill light, short lighting produces a dynamic lighting with bold highlights and deep shadows.



Short lighting makes the face appear longer than it really is because emphasis is placed on the well lit area of the face.
In this photo of 'Merlin' side or split lighting narrows the light on the face and gives it an optically longer look.



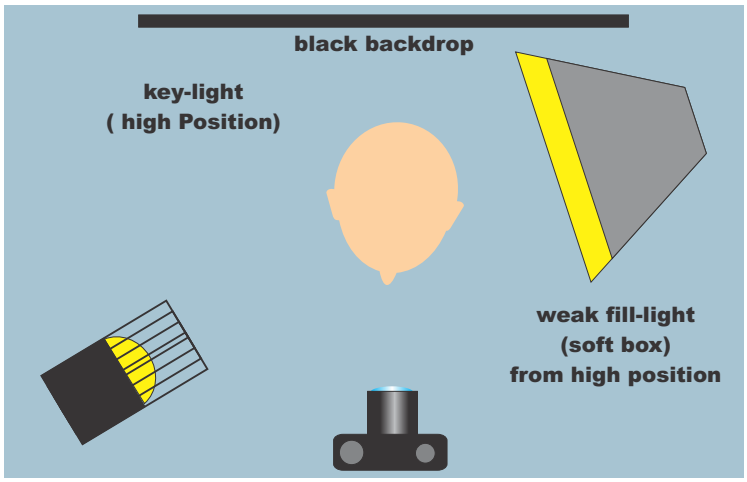
Photos: Hein Waschefort

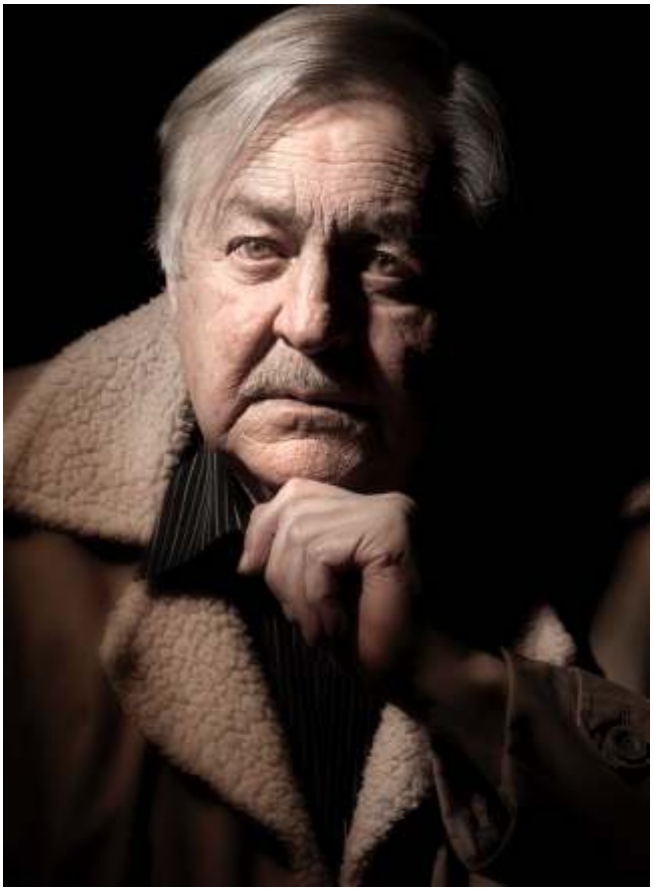
3. Rembrandt or 45-degree lighting

is characterized by a small, triangular highlight on the shadowed cheek of the subject.

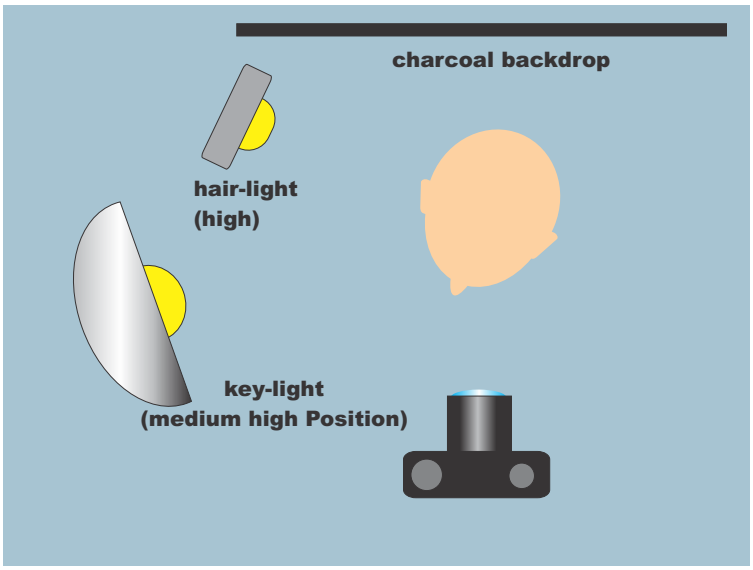
The lighting takes its name from the famous Dutch painter who used a skylight to illuminate his subjects.

This type of lighting is more often a masculine lighting and is used commonly with a weak fill light to accentuate the shadow side highlight. The key light is moved lower and further to the side than in loop and paramount lighting. In fact, the key light almost comes from the subject's side, depending on how far his head is turned away from the camera. The fill light is used in the same manner as it is for loop lighting. The hair light, however, is often used a little closer to the subject for more brilliant highlights in the hair. The background light is in the standard position. With Rembrandt lighting, kickers are often used to delineate the sides of the face and to add brilliant highlights to the face. You must be careful when setting such lights not to allow them to shine directly into the camera lens. The best way to check is to place your hand between the subject and the camera on the axis of the kicker, and see if your hand casts a shadow when it is placed in front of the lens. If so, then the kicker is shining into the lens and should be adjusted.





Rembrandt lighting was the best choice for me to do this character portrait of Pik Botha. It has the dramatic contrast yet still gives enough facial detail to convey the emotion. The typical triangle shaped highlight appears on the shadow side of the face. In this shot the key light is almost behind the model.
The fill light was very weak and diffused to increase the dramatic effect of the main light (the main light was a honey comb box). Take care that none of the studio lights shine into the camera lens causing lens flair, a lens hood is a good idea with all types of studio photography.



It is not common practice to use Rembrandt lighting on female models, however Rochelle worked very well. No fill-in light or reflector was used, the highlight in the eye tells us so.

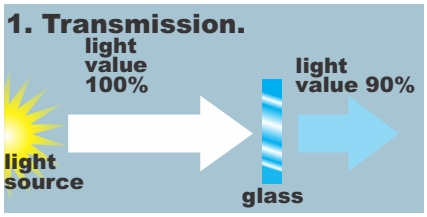
Photos: Hein Waschefort

Table top photography

The photography of glass is a very important to students wanting to venture into commercial photography. First, because glass and transparent plastic objects form such a large part of the commercial photographer's potential business. Second, because the technique is so unlike that used for opaque objects. The transparent objects encountered in commercial photography consist mainly of glass and plastics. Transparent plastic objects photograph exactly the same as glass objects of the same shape, and so it will not be necessary to deal with them separately. For simplicity, therefore, the word "glass" will refer to most transparent materials.

The principle characteristics of glass are:

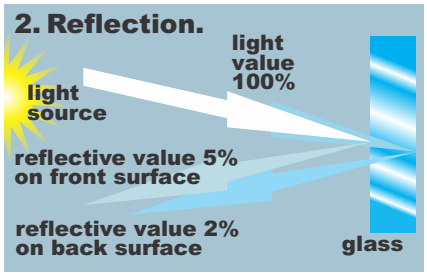
1.Transmission 2. Reflection 3. Refraction



Everyone knows that glass transmits light. But how much?

If we set an exposure meter in front of a light source so that the needle registers 100 light units, then place a piece of plate-glass between them, we find that the meter reading drops to about 90%. (This value will vary with the thickness and tint of the glass used.)

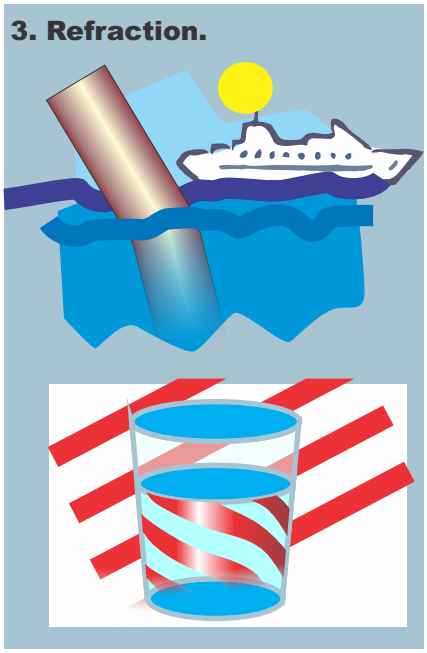
In other words, 90% of the incident light was transmitted. If we place a second sheet of the same glass between the light source and the meter, we will find the meter reading to be 81. That is, the second sheet of glass passed ninety per cent of the light passed by the first sheet (.9 x .90 = 81). This characteristic will be of value when we want to represent differing thicknesses in glass objects.



Suppose we reverse the positions of glass and meter from the preceding experiment. The meter will then be scanning the image of the light source as reflected in the glass. Eliminating experimental errors, we get a reading of 7%. The explanation is that about 5% of the incident light is reflected by the front surface and 2% by the back surface. The missing 3% can be accounted for by absorption and refraction.

Glass becomes more reflective as the angle the incident ray makes with the surface is decreased.

If the reflecting surface has a circular or spherical cross-section, the angles of incidence and reflection are measured from the tangent to the surface at that point.



A straight stick, partly submerged in water, looks as if it were broken at the waterline. This effect is due to the bending of rays of light toward the "normal" or perpendicular to the surface when passing from one transparent medium (air) to another of greater density (water or glass); and the bending of rays away from the normal when passing from the denser to the lighter medium. This is called refraction, and is the basis of all photographic optics. Refraction should be understood if glass is to be photographed successfully.

To better understand refraction - perform this simple experiment. Fill a tall straight-sided tumbler half-full with water and place it in front of a diagonally striped background. Above the level of the water, the glass of the tumbler acts similar to two panes of glass and no noticeable refraction occurs. Where the water in the tumbler transforms it into a transparent solid, the background stripes will be reversed - left to right - showing that refraction of the light rays has occurred. If the background is brought close, the tumbler will act as a magnifying glass. A light, brought up on the left side of the glass will cause a highlight on the right side. Many items of glassware have a solid cross-section somewhere and exhibit this characteristic. Refraction effects are at the root of many of the problems faced in photographing glassware, but can also be used for amazing creative control & effect.

Good photographers give themselves greater control and flexibility, they shift and vary their lights, and often turn to a number of ingenious accessories to help adjust the shape and quality of light. By covering light sources with diffusing material, they can soften the borderline between light and shadow. The opposite effect is accomplished by fitting lights with metal beam directors called barn doors. These devices for trimming down the beam of a spot or flood are attachments borrowed from the theatre. Each pair consists of two hinged metal flaps which name describes how they work: when the barn doors are swung wide open, the spot or flood emits a full, round flow of light; when they are partly closed, they cut off the edges of the beam, giving precise control of the area that is illuminated. Their principal purpose is to keep light from places where it is not wanted: blocking it from illuminating an undesirable feature, such as a highly reflective surface, or preventing it from shining directly into the camera lens.

A good photograph of glass:

1. **It must be sharp and snappy, whether it be a technical or merchandise illustration photograph.**
2. **It must convey the idea of transparency and glossy surface. Showing transparency is not difficult. The glossy surface is shown by providing a highlight reflection.**
3. **It must bring out design features, whether the object was designed for beauty or utility.**
4. **If a merchandise illustration, it should also be dramatic and beautiful, in order to create a desire to buy. Such a photograph will call attention to itself and overcome the lifelessness inherent in this type of merchandise.**

Photos: Hein Waschefort