

Anatomy of a PHOTOGRAPH

A basic guide to the internal structure of a photographic image, and how best to manage and display its message.









"Photography ... the greatest medium of graphic communication that our species has ever devise<u>d."</u>

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PHOTOGRAPHY, THE GREAT COMMUNICATOR

There are two golden rules for good communication—in any medium:

1. Have something significant to say.

2. Say it as succinctly as possible.

1. The best photographers are those who are able to identify the essence of what they are looking at, and then fillet out any competitive non-essentials. In this sense, good photography has little do with painting, and much to do with sculpture. As a general rule, it is NOT about building an image or `painting with light'. It IS about extracting one or two glittering threads of thought from the deluge of incoming visual data, and minimising or eliminating non essential details.

2. There is no universal advice that can open every mind to the full photographic potential inherent in the world around us. We each see the world through our own narrow window, meanwhile, our perspective is constrained both by our evolutionary origin and our cultural heritage. We can't do much about our evolutionary origins, but curiosity, humility and compassion provide key vantage points for seeing beyond the narrow confines of our own cultural backyard. This platform can be enlarged by looking carefully at good photographs. Ask yourself in each case: what exactly was the photographer feeling and trying to say to you? And what visual tools were uses—what viewpoint, high or low? What perspective? What lighting, etc? And why shoot at that moment?

How well we read those pictures, make those choices and employ those strategies partly depends on the way our eyes work ...

How our eyes 'read' images





The retina at the back of the eye is made up of two kinds of light-sensitive cells called rods and cones. Both are bacterial in origin but they react to light in very different ways.

Cone cells, are concentrated in the centre of the retina, and only react to relatively strong light. Most eyes register the full spectrum of wavelengths that make up white light.

Rod cells are scattered throughout the cone cells but are most densly concentrated towards the edges of the retina. In contrast to the cone cells, they work well in dim light but shut down entirely whenever they are blasted by strong light and may take take several minute to fully recover. They respond poorly to all colours except red, and 'see' only in monochrome. This is because their bacterial ancestors first evolved more than 3.5 billion years ago when the Sun was a very young star and its light was much weaker and much redder than it is today.

This retinal structure ensures that when we look at a photograph our eyes naturally gravitate towards the lighter tones. They also tend to gravitate towards the warm red-yellow end of the spectrum in preference to the short-wavelength blue-violet end.

With those factors in mind, we can now move on to look at the most effective ways to structure an image within a rectangular frame to achieve maximum communication with the viewer.

A Guide to Good Composition

Good pictures are born in the brain, not in the camera.

FIRST: Define to yourself *precisely* what it is about the scene in front of you that most excites your interest, and if you have time, decide what you want to say about it.

WITHIN THE VIEWFINDER:

1. GRAPHICALLY DEFINE THE PRIMARY SUBJECT (by lighting, colour and placement)

The most significant feature, the main 'message', should be readily identifiable. Irrelevant, competitive elements should be minimised, sidelined, or excluded.

2. HARNESS THE VISUAL STRONG POINTS IN THE FRAME

There are four visual strong-points within a rectangular frame. The main element of the image should **generally** coincide with one of these points.

3. LOCK OFF THE 'EXITS' AND WIDEN THE VISUAL ENTRY

Frame, crop, or display the image to make the visual access as easy as possible, and cut or shade any bright areas or lines that might rail-road the eye out of the frame.

4. USE CURVES AND REPETITIVE PATTERNS WHEREVER POSSIBLE

Curves and repeating patterns are the hallmarks of our thermodynamic universe and we cannot help responding warmly to them because they represent the same flow patterns of kinetic energy that define us.

Now let's look more closely at each of those four points ...

1. DEFINE THE SUBJECT

LIGHT is the maker and breaker of pictures. Since our eyes automatically gravitate towards light, the main pictorial element generally needs to be well lit so that our eyes can identify it easily. Perversely, silhouettes work well for much the same reason.



'Stations of the Cross', Sydney.



Stormy dawn at Chambers Pillar, NT.



Dawn sunlight gilds bacterial deposits in Shark Bay, WA.

LIGHT: Maker and breaker of pictures.



ABOVE: This beautiful old profile was lit by diffuse skylight entering a tent through an open flap.

RIGHT: This sensuous, rippled shape lasted for no more than a minute or so, since both the shape and the texture depended entirely on the acute angle of the early-morning sun.

BELOW: Bright moonlight on foam washing among the boulders gradually burned itself into the (5x4in.) film during a one-hour exposure, turning the sea into an eerie mist.

Gt. Sandy Desert, WA.



PINHOLE IMAGE

This picture was made on 5 x 4in. film with a modified cereal packet serving as the 'camera body', and a pinhole in silverfoil serving as the 'lens'. The 'shutter' was a piece of black duct tape.

The task was to make a symbolic image of fallen leaves that might link a story on homelessness with the ancient Greek quote "As the generation of leaves, so is that of men" (Homer, 500 BC).

The pinhole image offered an unlimited depth of field and a slightly unfocussed, dreamlike quality.

Because of the long time exposure required to burn the very dim, pinhole image into the film, I was able to walk to the seat pose as 'the figure' and then walk back to the 'camera' without any of my movements registering on the film. **`WARM' COLOURS automatically draw** the eye towards the main subject.





Star trails over Katatjuta (The Olgas), Uluru Nat.Pk. NT.



Alpine cushion plants, Mt. Anne, TAS.

Honey ant 'repletes', Alice Springs, NT.

2. HARNESS THE STRONG-POINTS

The visual strong points within a rectangular frame lie at the 'intersection-of-thirds'. Use these points as a **rough** guide to achieving strong composition when framing your subject in the camera viewfinder.











Exceptions to the strong-point rule

If you want to express the extreme **isolation** of the main element, or stress its bulk and **domination** of the environment, it is often better to place the it near the middle of the frame. Central placement also conveys a strong

sense of immobility, and when used in a social context, it can be used to magnify a sense of loneliness, sadness or grief.



RIGHT: With the visual point of convergence placed slightly *above* the graphic strong-point of the frame the pylons become stretched by the wide-angle lens. This distortion helped to emphasise their height, thereby adding to the drama and visual tension inherent in the extreme perspective.



The Fringe-dweller

The viewer's eye is automatically drawn to the small lonely figure in the upper left background because it is the only visually isolated object in the whole frame. His placement near the edge of the frame fails to conform to the intersection of thirds, but adds to the message of his cultural insignificance and social isolation. (He was homeless and lived in this small hillside park.) In taking the shot I had in mind a line attributed to the ancient Greek historian Homer: "As the generation of leaves, so is that of men." (see p.9.)



3. LOCK THE VISUAL EXITS ...

Our eyes naturally gravitate to the most dominant WHOLE object within the image area. For example, if you want to draw attention to eyes (RIGHT), the outline of the head should be cut by the frame.





LEFT: If the heads of the two tall Pandani trees at right were included in the shot they would compete with the juvenile Pandani in the lower left of the picture. Cropped by the frame, the juvenile remains isolated, whole, and enhanced by its placement in snow at the lower left strong-point of the frame. It commands the eye to attend to it. This viewpoint also eliminated competition from a bright sky.

... BUT MAKE THE IMAGE ACCESSIBLE

The rule for cropping a picture similarly applies to the placement of an image on a page, a computer screen, or a television screen.

If it is essential that the reader grasps the significance of the subject immediately, it helps if there is no visually competitive frame around the image. A partial 'bleed' may be better than placing the picture on a black background in many cases. Where words have to be displayed as well, a three-quarter bleed is usually the best solution. That way, the picture area is maximised and the absence of a frame on three of the four sides allows the the eye to slip directly 'inside' the image area and instantly grasp the main picture element. This is particularly important if the image is relatively dark. Finally, good images sell themselves in simple layouts; fancy layouts only distract and compete.

Page/screen

If it is essential that the reader grasps the significance of the subject immediately, it helps if there is no visually competitive white paper around the image. A partial or full 'bleed' is even better than placing the picture on a black background. That way, the picture area is maximised, and the absence of any frame allows the the eye to slip straight 'inside'



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Three-quarter bleed



Weano Gorge, Hamersley Ra. WA.

LEFT: The overhanging rock narrows the visual exit to the bright sky, locking the viewer's eye into the gorge and making the two figures more findable.

BELOW: Cropping off the brightly-lit leaf tips helps to prevent the viewers attention straying from the picture's main element.

BOTTOM RIGHT: With a narrow-beam spotlight focussed on the fire-making tips of these Aboriginal firesticks, the light-coloured shafts of the firesticks are rendered relatively darker. This helps to prevent them from leading the eye away from the main element of the image, the fire-socket.





Menzies banksia, WA.

Aboriginal fire-sticks, N-E QLD.

4. CHAOS* AND ITS FRACTALS

In making, cropping, or reading pictures seek out spirals, curving lines and repetitive patterns. These most eloquently express the thermodynamic laws that shape and drive the universe—and all of its life forms. On Earth they reveal cosmic forces at work in the biosphere, and therefore in us, so they are invariably attractive to human eyes.



Sand dunes on Mars (NASA image).



Cloud vortices over the Azores (NASA satellite image)



Wind-rippled dunes, Great Sandy Desert, WA

COSMIC 'FINGERPRINTS'

Our universe is a unified energy system and its patterns of energy flow are inherently Chaotic and fractal—just like the flow of energy in a cosmic dust cloud (RIGHT) or a soap film (FAR RIGHT).

Everything that we see around us expresses this cosmic characteristic in every aspect of its existence, regardless of scale. Naturally, we respond well to these fractal patterns wherever they appear and our eyes retrace them with pleasure.

RIGHT: This is the Chaotic 'fingerprint' of water that flowed from beneath a melting glacier in northwestern Australia some 280 million years ago. After erosion by dry cave winds, only the finer, denser sediments deposited by slower eddies remains, revealing the chaotic turbulence of the meltwater.

FAR RIGHT: Chaotic pattern of folds (gyri) in a human brain.



Hubble Image, NASA.





Wind-eroded glacial sandstone, Kimberley, WA.



Gyri in human brain.

The Chaotic patterns displayed by vascular bundles of banksia xylem and phloem (BELOW) reveal their cosmic origin—as does every cell, organ and system in our bodies. Inevitably, we unconsciously recognise these patterns as 'self', and so our conscious brain takes pleasure in them.





ABOVE: This 'honeycomb' erosion pattern in sandstone echoes the pattern of the membrane walls that define cells in all plants and animals.

The muscular, sensuous limbs of a Western Australian Gimlet gum (RIGHT) and the dentritic (branching) drainage pattern on mudflats in Western Australia's Kimberley region (BELOW) both bear the stamp of the cosmic energy laws that shape all of us.

Such dentritic patterns are mirrored in the blood, nerve and lymphatic distribution systems in every part of our bodies. Consequently, when we see them in the natural environment we unconsciously recognise and dwell on them with pleasure: they ARE us.



Tidal drainage system, Kimberley, WA



Gimlet gum (Eucalyptus salubris), Kambalda, WA.

SEEK OUT THE SIGMOID CURVES

As biological extensions of the Earth's crust, we are cogs in the cosmic machinery of entropy (the dissipation of energy). Consequently, we too, are shaped by the same Chaotic and fractal (repetitive) patterns of kinetic energy flow that shape the rest of the universe. And the pattern that is most significant for us is the sigmoid curve.



The sigmoid is a characteristic flow pattern of kinetic energy at all scales of magnitude from the cosmic to the microscopic. In our Sun, for example, a 'Sigmoid' heralds the gigantic eruptions of energy that form sunspots. Where sigmoid shapes occur in the human body they similarly signify the presence of muscles charged with the powerful metabolic energy that comes with youth, strength and health. This not only makes the sigmoid outline intrinsically attractive to us, it offers photographers an inherently seductive visual asset in any photographic image, whatever the subject matter. And if the subject *is* human, the value of the sigmoid doubles ...

Seeking the sigmoid

Since smooth sigmoidal curves invariably signify powerful flows of kinetic energy, they coincide with nourishment and growth and are inherently attractive to human genes.





Our devotion to the sigmoid begins very early ... and lasts a lifetime!



Inevitably, in adulthood we remain devoted to that essence of 'beauty', the sigmoid curve. And since these always appear in young, healthy bodies—in lips, eyes, hair, limbs and torsos—they also double as the icons of reproductive viability. They are 'sexy'.















Seeking the sigmoid

Even when we attempt to enhance our reproductive status by ornamentation, our genes direct us to prefer patterns that are essentially sigmoidal.

A ONE-EYED VIEW

If a picture of mine is best labelled as 'Art', then I have failed as a photographer.

Photography is by far the greatest medium of graphic communication that our species has ever devised. Most wonderful of all, it was born with an umbilical link to the natural world: you could photograph only what you could see, and you had to be there. So some degree of documentary truth was unavoidable.

The other gift photography gave us was its inherently symbolic nature. Early photographs portrayed the world in monochrome. We see in colour. Therefore, to interpret the symbols of reality that were inherent in a black-and-white image, the viewer's perceptive right brain had to be switched on and fully engaged. This allowed a good black-and-white image to deliver far more 'significance' and 'meaning' than could any colour photograph.

That rule remains valid. If your primary photographic intent is to describe the external appearance of something, use colour. But if you want to convey significance and arouse the viewer's emotions, use the symbolism inherent in monochrome imagery.



In the heyday of photojournalism the camera allowed us, for the very first time in history, to look directly at the world through eyes other than our own, almost as though we were there. And if the photographer happened to be one of the giants of the medium, such as Henri Cartier-Bresson, W. Eugene Smith or Ansel Adams, the pictures enabled us to see and feel the situation more clearly than if we had indeed been there. This was not mere Art, this was visual communication in its highest form.

Photographs now inform, highlight, reaffirm, and redirect our lives. They strengthen memories and nurture feelings of attachment, love and pleasure with a poignancy that lies far beyond the reach of other forms of communication. In the wake of natural disasters survivors prize photographs above all other rescued possessions. 'Things' can be replaced or recreated to some extent; missing children, parents, friends cannot. However, they *do* live on, in a sense, in photographs.

Similarly, photographs underpin and validate all aspects of modern science, providing enduring evidence to support data, explain techniques, and corroborate or refute experimental research. Cameras can venture where we cannot go—into the deepest ocean, inside the the smallest bacteria, and far into space. And they can analyse motion that is either too fast or too slow for the human eye to discern—the opening of a flower or the passage of a bullet.

Conversely, if you want to sell anything, a peanut or a president, a can of fresh air or a 'legal' case for war, photographs are an essential marketing tool. Photographs contribute to rainforest destruction—and help to save endangered species that live there; help to launch spacecraft to the edge of the solar system, and launch human imagination to the limits of ingenuity. Photographs entertain, inform, inspire and horrify most people on the planet on a daily basis. And they achieve these goals with unparalleled speed and precision. In short, the entire edifice of modern culture has been midwifed by the camera and now pivots upon the photographic image.

With our species facing the first global reproductive decline in its history; with religious bigotry, cultural discord and social inequality on the march on all continents, and environmental storms gathering on all sides, it is especially sad when talented photographers find nothing better to say than: "look at me: I am an Artist."

Biographical note

Originally a West Australian newspaperman, Reg Morrison is now a Sydney-based writer-photographer who, for the past 25 years, has specialised in environmental and evolutionary matters.

His latest book, **Australia's Four-Billion-Year Diary**, compresses the evolution of the continent, its plants and animals, into twelve 'monthly' episodes, and is essentially designed for High School use. (Sainty & Associates, 2005)





Reg's other recent book, published in 2003 by New Holland, Sydney, under the title **Plague Species: Is it in our Genes?,** summarises the massive impact that humans have had on the biosphere, and explores the evolutionary origins of the behaviour that produced this impact. It was originally published in 1999 by Cornell University Press, New York, under the title **The Spirit in the Gene.**

Other books by Reg Morrison:

 Australia, Land Beyond Time, New Holland Publishers, 2002 (original title: The Voyage of the Great Southern Ark, 1988).
The Great Australian Wilderness, Phillip Mathews Publishers, 1993.
Australian's Exposed, Paul Hamlyn, Sydney, 1973. The images in this collection are subject to the author's copyright unless otherwise indicated. Reproduction rights and photographic prints may be obtained via email application to:

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