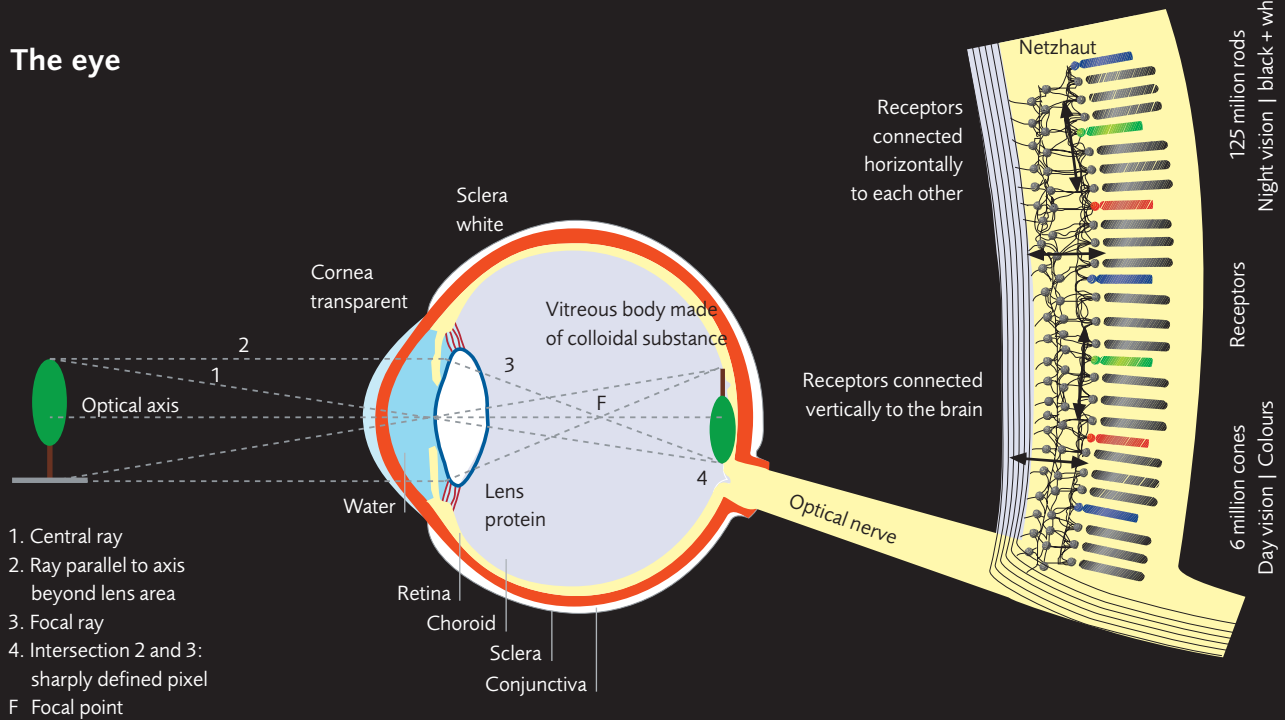


Series (10):

Vision and perception

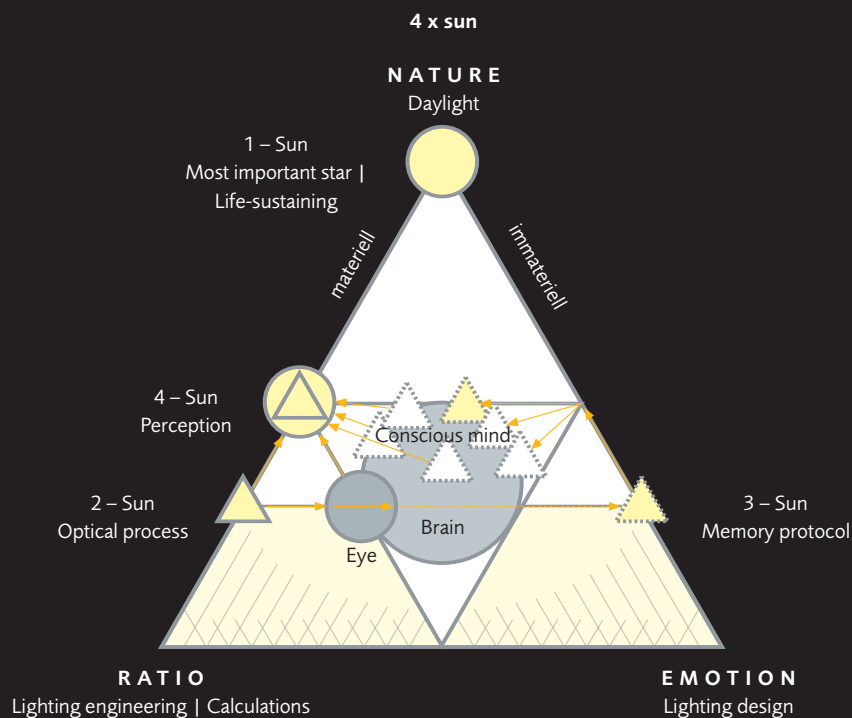
PROCESSES IN THE EYE AND BRAIN

The eye



Wall of film in the camera – flat projection area – distorted at the edges
Retina in the eye – rounded projection area – correct projection

The brain



Series (10): Vision and perception

The human eye

If you follow the path of rays in the eye, you can compare it to a camera: the tough white sclera corresponds to the housing of the camera, the convex transparent disc in front is comparable to the outer lens on a camera. The iris corresponds to the aperture and the elastic lens surrounded by a sphincter can be compared to the movable part of the lens. The rounded projection area is the equivalent of the film. In the cavities between cornea and iris, and between iris and lens, there is fluid; the main part of the eye ball is a vitreous body made of a colloidal substance. These parts of the eye are liquid lenses that also act as refractors for the entire organ.

Sensors and interconnections

The flexible lens is admittedly a remarkable construction (a plastic equivalent is available nowadays and has been successfully implanted to replace the defect original), but the composition of the retina is so fascinatingly complex that a comparison to a film comes nowhere near to describing it. 125 million rods for night vision (black and white) and six million cones for day vision (colours) together make up 70 per cent of a human's sensory cells. In general, it is said that vision uses three quarters of our nerve cells and one quarter of our energy household. The receptors are connected vertically to the surface of the retina with the brain and horizontally to each other, which means that an image begins to take shape on the retina. We know, however, that perception is governed by our brain. The chemical processes in the receptors and the way they are interconnected are known. The processes in the brain are more complicated and an adequate explanation as to how they work has not yet been found. Since vision is a conscious process, it is not so much to do with physiological issues, but rather with issues of perception and behaviour.

1. The sun as the most important star

The sun is the most important star in our system. Our connection to the sun is via the energy it radiates. Through its interaction with matter it produces daylight and determines our weather. The dimensions of the sun are measurable and can be portrayed in scientific terms. It is a rational phenomenon. We can feel the effect of the sun, it affects us emotionally.

2. The sun as an optical process

In human vision, the sun's rays enter the human eye as part of an optical process. Up to the point when the rays reach the surface of the retina, the human eye functions according to the laws of geometric optics and can be compared to the workings of a camera.

3. The sun as a memory protocol

On the retina differentiations are made between light intensity and image range, which are in turn fed to the brain where this information is further processed and recorded to our memory. This stored information can be recalled at any time, without necessarily involving an optical process, and can be portrayed in language form (spoken or written word) or in graphic form (drawing).

4. The sun as a factor of perception

The memory protocol generated by the sun joins many other memory protocols, which we can refer to here as our conscious mind. Comparing our memory protocol of "sun" with many other protocols will give rise to the term "sun". The interpretation of "sun" depends on the age, sex, origin and environment of the human being. If the term stored in our brain compares favourably with the visual process in the eye, we can say human perception takes place.

Example

There have been a number of cases where persons who have been blind for many years have had successful operations, but did not manage to cope with "being able to see" and consequently took their own lives. What happened? The blind persons most certainly had acoustic memory protocols, but very poor or no optical memory protocols. That is to say, in spite of the fact that there was nothing physically wrong with their eyes any more, they were not able to "see", because their brains could not participate in the visual process. Some animals of prey are able to spontaneously adopt the colours and patterns of their surroundings while in flight. To do this they interfere with the optical process of the hunter. The memory protocol of the animal of prey stored in the hunter's brain no longer aligns with the optical process. Perception is interrupted.