

Vision-Science

The camera – eye association is a red herring.

The physiology and function of the eye / brain is fundamentally different from the optical and mechanical engineering present in traditional cameras.

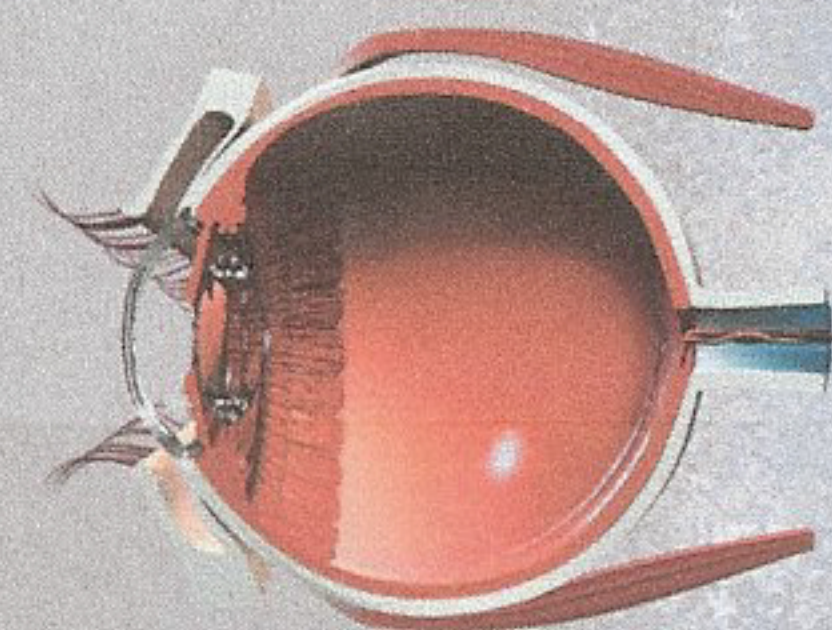
The format of *optical pictures* and *picture-space* is not available to us as we compile the information from which we are made aware of our surroundings.

We need to make clear distinctions between the meanings of words.



Phenomenology suggests that we should be exploring the world, not through instrumentation but through our intuitive understanding.

Picture: - "a real representation, an ordered record, such as a video-signal, a photograph, an activity pattern in a neural structure. The order of the picture is purely conventional and exists only with respect to an external agent."
Prof. Jan Koenderink



Our, first person reflective study of the essence of consciousness matters. We need to understand and extract the essential features of experience.

Images: - "always contain more than pictures because the whole structure of the receiver (a lifetime's experience) is summed up in them." Prof. Jan Koenderink

An over simplified version of events has visual signal as a chaotic cascade of data, that is fed in flow through each eye, each with 2 types of receptors principally positioned in two quite distinct regions, the data is segmented before travelling along 2 independent pathways. It is processed, sampled and segmented further within independent regions of the brain to be collated, composed and cascaded together with contextual information from short and long term memory.

Then what? Miraculously we become conscious of our environment in the way it needs to be seen for us to complete the tasks we are engaged in at the time!

"This is not a matter of $1 + 2 = 3$; or even 4. It's more like $1 + 2 = \text{elephant!}$ "

**1 + 2 =
elephant**

If we accept that the monocular visual field is composite, then monocular vision can also be described as being stereo! By making relativistic judgements between the data-sets a single eye generates, we **create** the saliency of vision as much as we **detect** it.

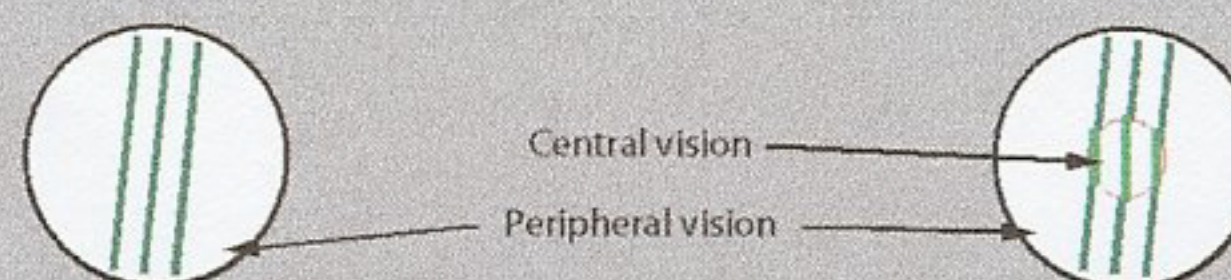
Such **monocular stereo** affords us some degrees of compositional variation. These are exploited dependent on their suitability for a given task, meaning that our composition of visual field is also variable and task dependent.

The asymmetry of monocular stereo

3 vertical rods represent an object in vision.



It is possible to separate out both images types in either eye. The projection of the image type can alternate from either eye instantaneously.



The asymmetrical monocular stereo, stereo pair.

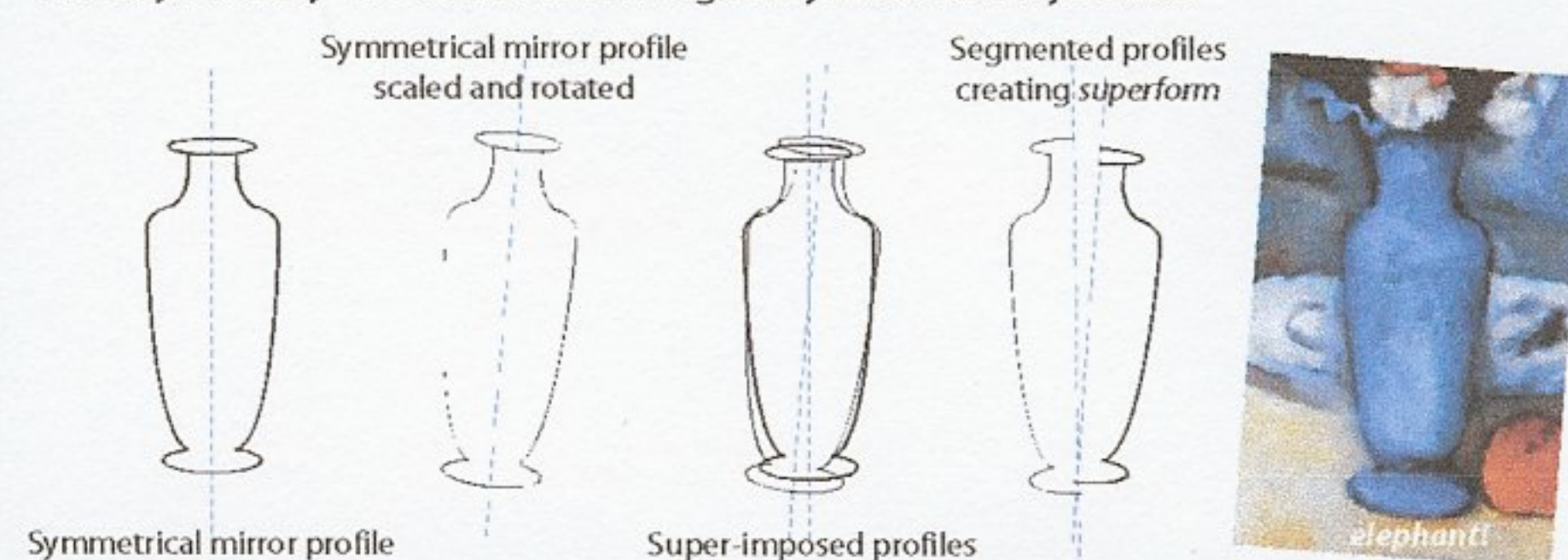
Inconsistencies are revealed at the junction of central and peripheral vision.



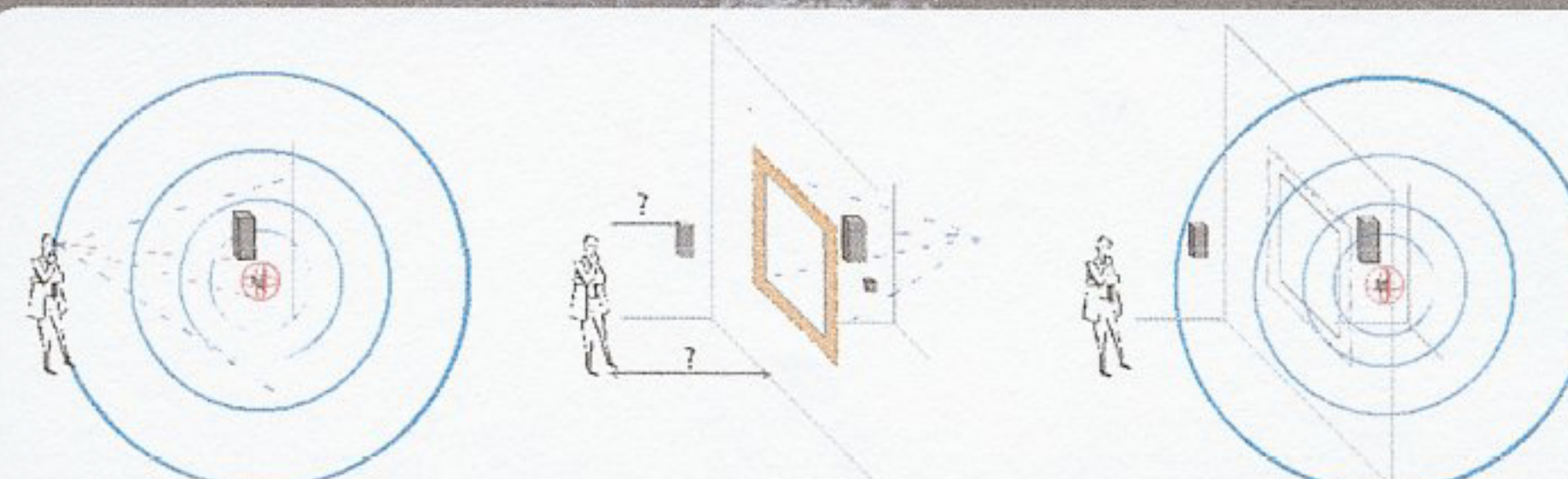
Central vision in which binocular stereo effects can be included. Area of spatial texture in peripheral vision is extended.

Half of central vision suppressed to enhance appreciation of 3D object in space. Creation of asymmetry in central vision.

The asymmetry of central vision regularly recorded by artists



Vision-Space media is able to replicate for these experiential nuances. Accounting for them generates media that truly reflects the reality of first person objectivity. The media is able to factor the viewer's presence into the depicted scene.



As we view real objects in space we are able to make true proximity judgements through the 3D spatial texture apparent in peripheral vision. Through this function we are able to discern key spatial orientation information.

Picture space; central perspective representation does not provide the proximity cues. Even complex binocular stereo effects lack these spatial awareness characteristics.

Vision-Space allows us be spatially featured into the **presentation** we are not just confronted by an optical representation. This suggests a new level of interaction with this more immersive media.

From careful observation of the phenomena of vision it is apparent that there are two principle and independent data-sets involved in our projections of monocular vision. The suggestion is that these broadly relate to the two neural pathways and their broad associations of **what and where**, leading to the specific use of language such as 'object in space'.

Vision is closer to a **presentation** through controlled hallucination than it is the **representation** of picture-space and the fundamentals of optics.