the animal mind (sentience) presents IMAGERY
“rational thought” (sapience) forges CONCEPTS

sentience uses an “affective logic”
sapience uses a “disenchanted logic”
reaction immediate
SENTIENCE

reaction delayed
SAPIENCE
SAPIENCE is discursive, reflective

SENTIENCE is immediate, intuitive

“Now! ... That should clear up a few things around here!”
SENTIENCE doesn't recognize chance
SENTIENCE admits multiple worlds, its resolution is ACTION.

Only the moment NOW (including past and future) counts.
for SentiEncE anything seen is thereby REAL

no help to protest Centaurs don’t exist if you meet one!

in real life you need to deal with ANYTHING in actuality
in SENTIENCE anything has either an inner life or is subject to magical forces that are objectified
SENTIENCE counts “objects” differently from sapience: the two women at centre compose a single visual object

“passage”
SENTIENCE doesn’t reckon with “half a man” so it freely invents a whole one. “lost contour”
two very different visual objects “composed of swans” & a strange visual object composed of sparrows
if a shape is amorphous, sentience may ignore it or create something unexpected

“dolphin with eye”

nothing special

Bernini
these count as equivalent forms though they may have different feelings to them (hard, soft, heavy, light, smooth, rough, ...)

it is "VISUAL FORM" at the gut level
SENTIENCE doesn’t LOOK for things, it FINDS THEM!

“attention” is a SAPIENT concept, SENTIENCE doesn’t need it.
the toad uses a **seek image** in order to find food

aesthetics is "sensible wit"
PSYCHOGENESIS

awareness happens (like sneezing) you don’t do it

pictures are artfully crafted so as to evoke imagery
DEPTH is a bead shifting game in pre-awareness.

If VISUAL SENSE conflicts with sapience it is called ILLUSION.
“... distance, ... cannot be seen. For distance being a line directed end-wise to the eye, it projects only one point in the fund of the eye, which point remains invariably the same, whether the distance be longer or shorter.”

Bishop Berkeley,
Essay towards a New Theory of Vision,
1709
the relative depth of the confetti is indeterminate

this is not a VISUAL 3D cloud
inflections of surfaces ("pictorial relief") are different in kind from volumetric depth. Both yield “3D”. These two “depth-forms” are often combined in pictorial design.
contour, occlusion, shading, layering and contrast do most of the work!
the circle turns out of the picture plane!

the genesis of pictorial space
is is not hard to use cues in picture design
the cruder the more effective!
intuitive shading: various methods work well
but is shading NEEDED?
it is easy to overdo shading
seeing is not inverse optics

less is more
there is no doubt about the relative locations of the stones

the stones are anchored to the ground surface

nails it!
a demonstration of FLOATERS

visual objects have to be anchored to some substrate

a ground shadow always works
what works in a woodcut works in a photograph
A and B have no obvious depth relation.

P and Q are on a common surface, thus are related in depth.
for any point pair you can ask “which one is closer?”
(experimental phenomenology)
depth obtained from many 2-point comparisons

pictorial depth is FACT, not FICTION
“PERSPECTIVE”

the construction of pictorial space
the human observer is polarized by frontal vision and a body tuned for bipedal locomotion
"perspective" is a hyperbolic involution that swaps the eye and the principal vantage point.
depth is read **front to back** by frontoparallel planes

reading starts at the viewport, which is momentarily set by situational awareness
formally, the viewbox is just a projective map of the frustum
the deeper in the viewbox the smaller things get in the picture plane

the deeper in the viewbox the thinner space layers become
eye & principal vanishing point swapped!

the topology of the field of view in mental space
the abacus model of psychogenesis of awareness
the abacus model of the psychogenesis of pictorial space
how long is Nefertiti’s nose?
volumetric space is read fore to aft
“beads are launched into depth”
the actual depth range is irrelevant
"scenography' in garden theatre design
museum diorama with intruder, spoiling the “illusion”
scenographic design, meant to be viewed frontally
PICTORIAL REPRESENTATION

viewport (→ picture plane)

side view showing distance

ways to conceive of the viewbox
Arnold Böcklin’s painting *VITA SOMNIUM BREVE* makes a good example of composition in the viewbox. The fountain is located about halfway (∞/2) the viewbox, the hither pane is in front of the children, the blue sky is the yonder pane, a backdrop.
in the picture plane one has a circular composition centred on the fountain head

it has no (anti-)clockwise sense

such was only part of Böcklin’s intention

the planar design is pretty tame and unrelated to the picture’s meaning - although it does trigger the first impression
in the viewbox there is an evident **progression** from beginning to end

it is crucial to the picture’s **meaning** “life a short dream”

the progression in the composition is a **twisted spiral** in the viewbox it cannot be shown in 2D
2 views of Böcklin’s 3D composition

the viewbox is a key compositional tool
ICONIC IMAGES

pictures are pigments on canvas
images are mental figments

the beholder is just as important as
the picture crafter in creating imagery
pictorial space is monocular by its very nature
the **Field of Regard** is a quilt of “looks” embedded in situational awareness – it is not “iconic” –
the “perspective centre” of optical situational awareness is ill defined

- centre of the pupil
- rotation centre of the eyeball
- atlantoaxial joint of the neck
- body movements

“iconic vision” requires static, monocular looking
in order to appear **ICONIC** (a single thought) a **distant** view (single fixation) is required. "distant" implies detached.

it is Adolf von Hildebrand’s **Fernbild** notion.
a picture is not a window
do they “see” the “same” thing? “Official” theory says NO!

Karin Jurick
Death’s arrow always points at you – the oblique Death is even skinnier
WINDOW viewing – the content of the frustum

equivalent configurations

yield the same picture

such equivalences find use in stage design
the bead shifting game respects the picture

translation in depth

rotation in depth

scaling of depth

“mental movements” are part of the Beholder’s Share
does the corner of this room subtend a right angle?

there are infinite “solutions” to any picture
a “beholder’s share” is a necessity!
"mental movements" are a FACT, at least in experimental phenomenology
ambiguities of optics force psychogenesis to add a Beholder’s Share

pictorial vision is necessarily idiosyncratic because optical “data” is “incomplete”
<table>
<thead>
<tr>
<th>focal length $\frac{1}{2}$</th>
<th>focal length 1</th>
<th>focal length 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><img src="image3.png" alt="Diagram" /></td>
</tr>
<tr>
<td><img src="image4.png" alt="Diagram" /></td>
<td><img src="image5.png" alt="Diagram" /></td>
<td><img src="image6.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

The diagrams illustrate the effect of different focal lengths on the size of objects in the image. The variation in focal length changes the scale and appearance of the objects shown.
Bill Brand’s (1961) Nude on the Beach extends far into the background.

Mantegna’s Dead Christ (ca, 1480) is just a shallow foreground.

“abnormal” views cause “deformations”
field of view ca 50° (“normal,” no deformations)
field of view ca 20° (space “flattened”)
a remarkable 180° field of view (space “expanded”)

it is in Hauck’s projection (“Plattkarte,” equirectangular)
The extent of the human field of view is far too large to be covered by the conventional perspective.
some people see “everything in front of them”
others feel the visual field “extends beyond their ears”
the perfect military order is not SEEN that way!
facing the camera in circular arrangement does better!
visual psychogenesis works with model B, all the time
normal view:

picture width ≈ viewing distance

picture plane

viewing distance

53º7’48”

35-50mm lens on “full frame”

Elmar lens F/3.5, 5 cm focus.
some perspectives of a cube look like a long corridor, others like a shallow slab

the "good" perspective of a cube looks like this

there appears to be such a thing as a normal view

sentience simply ignores "proper" perspective
view from infinity

view from near
having all figures face the camera should cure the pesky perspective rotations
it takes care of the rotation but ...

perspective “deformations” make it look objectionable
Guido Hauck recommended the Plattkarte (so called equi-rectangular map) as more pleasant than linear perspective, at least for “Naturmenschen” such as artists, children and women (this was the 1880’s)

as a boon it may map the full (360°) horizon whereas perspective is limited to (much!) less than a 180°
Guido Hauck’s perspective saves the day, this looks good! (but it is “wrong!”)
a panoramic selfie of me in my living room

Hauck’s plattkarte shows 360°x180° (left=right!)
it all goes haywire if you tilt the camera

if deformations don’t bother you there are lots of better (e.g., conformal) options
the Pierce quincuncial is conformal much depends upon the principal viewing direction
but: essentially anything will beat linear perspective ...
EFFECTIVE SPATIAL COMMUNICATION
architecture & figures treated separately
the bench is in perspective, seen from near
each of the men is seen frontally, from far
space layers treated in parallel projection

foreground

middleground

background
2-5 depth layers (3 may be best, 7 is overkill) read well

it is like tones: beats ANYTIME!

it is much like music and applies to virtually all qualities like size, slope, tone, color, ..., as also DEPTH
just 3(!) trellises or coulisses yield perfect spatial clarity
non-perspective, even dystopic renderings can be very effective
drawing from the inside out trades “depth” for “plasticity”
what about the space behind the figure?

the lure of "dystopia"
thank you for your attention!

Peppa Pig
Neville Astley

Saul Steinberg

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