

Sensation & Perception

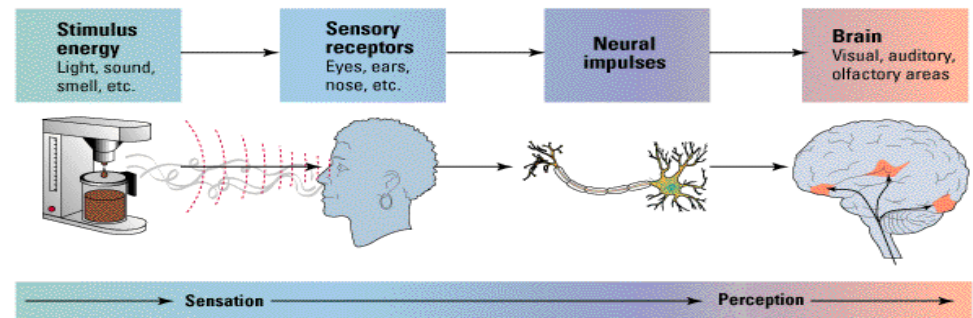
What is sensation & perception?

- _____
 - Detection of _____ emitted or reflected by _____
 - Done by sense organs
- _____
 - Process by which the _____ and _____ sensory information
 - Done by the _____

How does _____ work?

- _____ receptors detect

- Cause sensory _____ in
_____ nervous system to fire
- Impulses reach the _____,
which interprets the signal



Elements of a Sensory System

Energy contains information about the world

1. Accessory structure modifies energy

2. Receptor transduces energy into a neural response

3. Sensory nerve transfers the coded activity to the central nervous system

4. Thalamus processes and relays the neural response

5. Cerebral cortex receives input and produces the sensation and perception

Sensory _____ and

- _____
 - The _____ of sensory responsiveness when stimulation is _____ or repetitious.
 - Prevents us from having to _____ respond to _____ information.
- _____
 - The absence of normal levels of sensory stimulation.

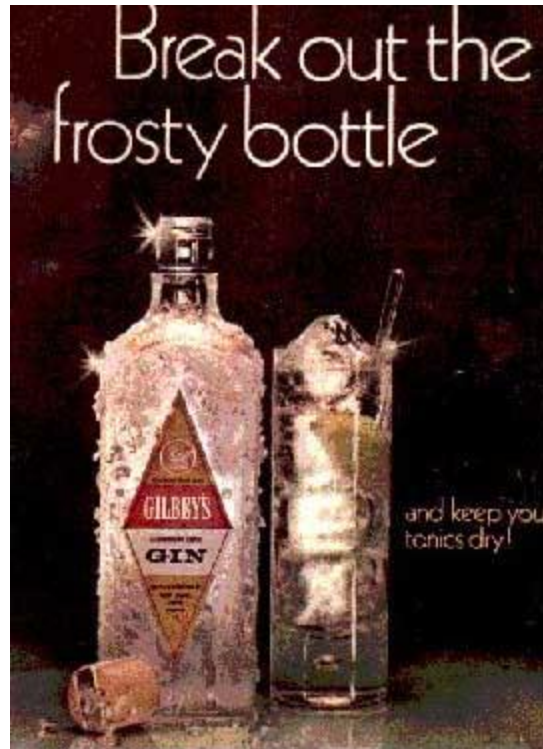
Sensory _____

- _____ of the senses.
- Can use _____ to reduce sensory overload.
 - _____
 - The focusing of attention on selected aspects of the environment and the blocking out of others.

_____ Attention

- This task, called _____, is used to examine _____.
- Most people do not recall many _____ words, even though they were repeated many times.

Subliminal Messages

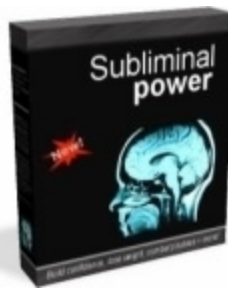


How you can use Subliminal Power
to change your mind AND your body
... WITHOUT EFFORT!

AND THAT'S JUST THE BEGINNING!

Subliminal Power can also change your
inner personality... within minutes!
HOW WOULD YOU LIKE A BRAND NEW BODY?
Subliminal Power can literally change your
physical body... without surgery!

For only \$49.99 + tax & s/h



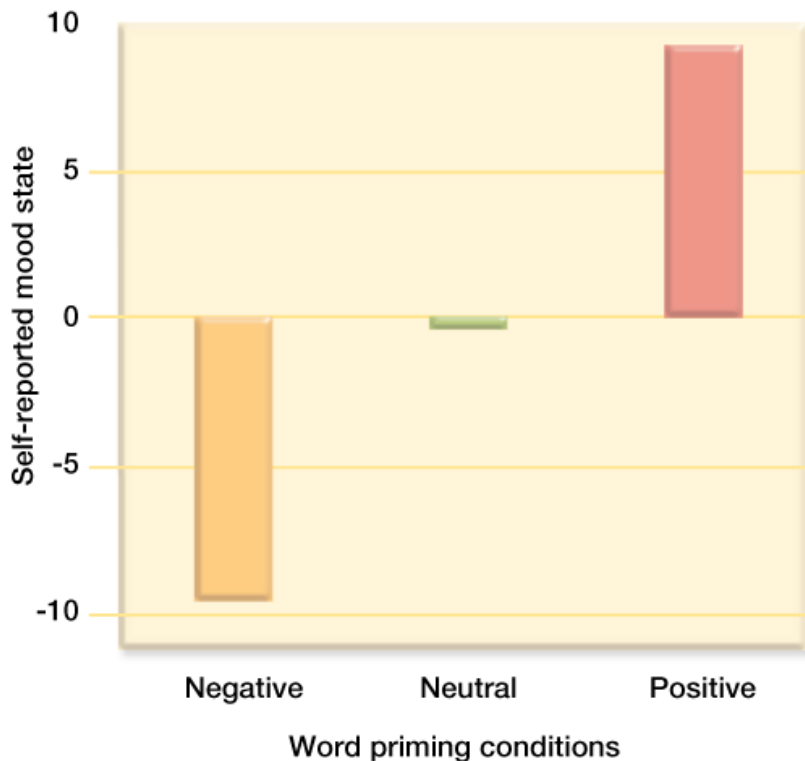
Attentional Processes

Influence without Awareness

Examples:

- _____ Message
 - A stimulus that is presented below the threshold for awareness.
- _____
- _____
 - Tendency for a recently presented word or concept to facilitate responses in a subsequent situation.
- _____
- _____

Attention in Perception: Messages



- Despite not being aware of the words that they “saw”, those exposed to

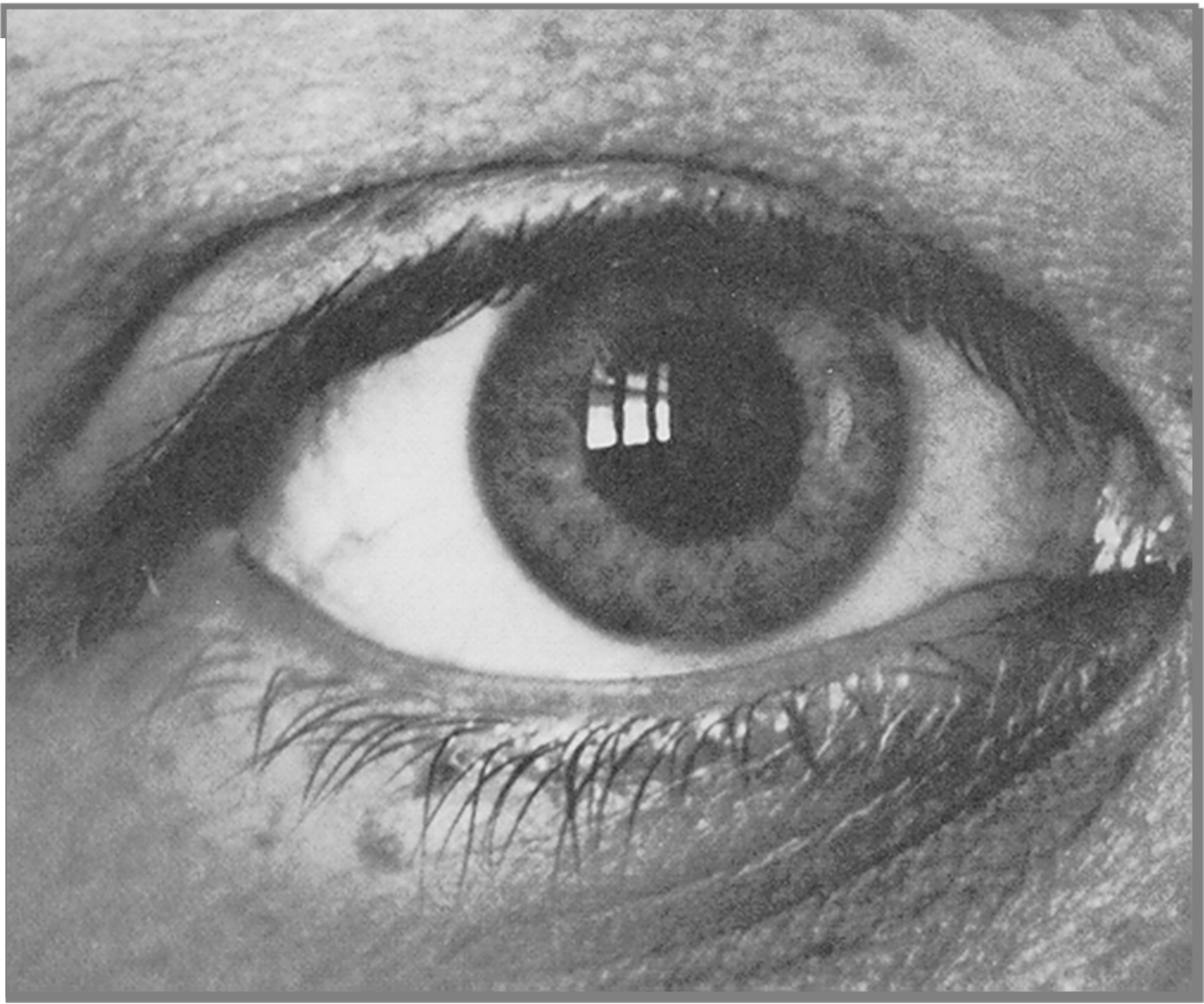
words were happier and those exposed to

words were sadder. This indicates that moods can be influenced without awareness.

_____ versus

- _____
- Although subliminal priming can influence _____ and _____, research doesn't support its success in major levels of _____.

**V
I
S
I
O
N**

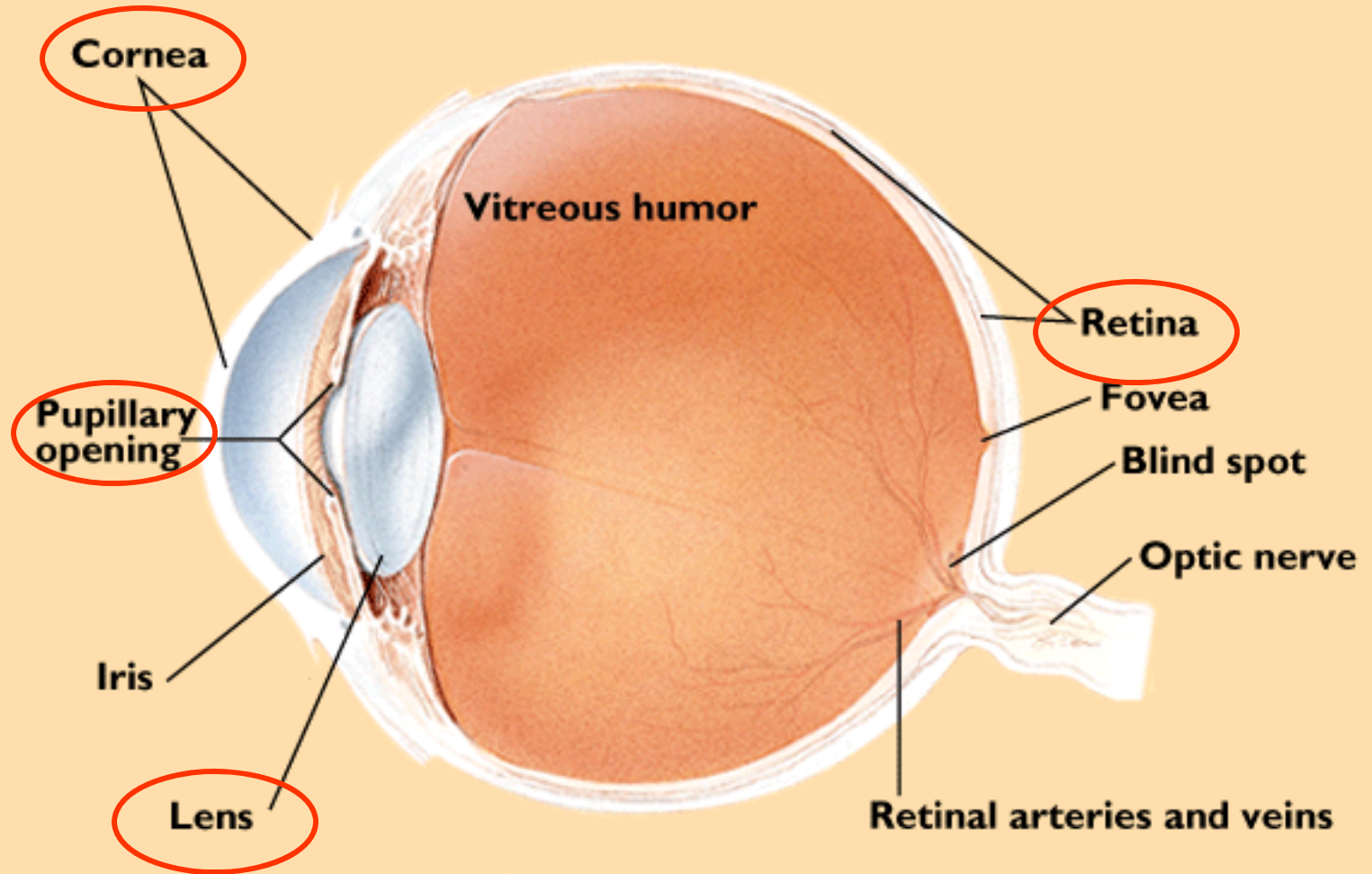


Accessory Structures of the Eye

- Cornea
- Pupil
- Iris
- Lens

A Cross-Section of the Human Eye

The Major Parts of the Human Eye

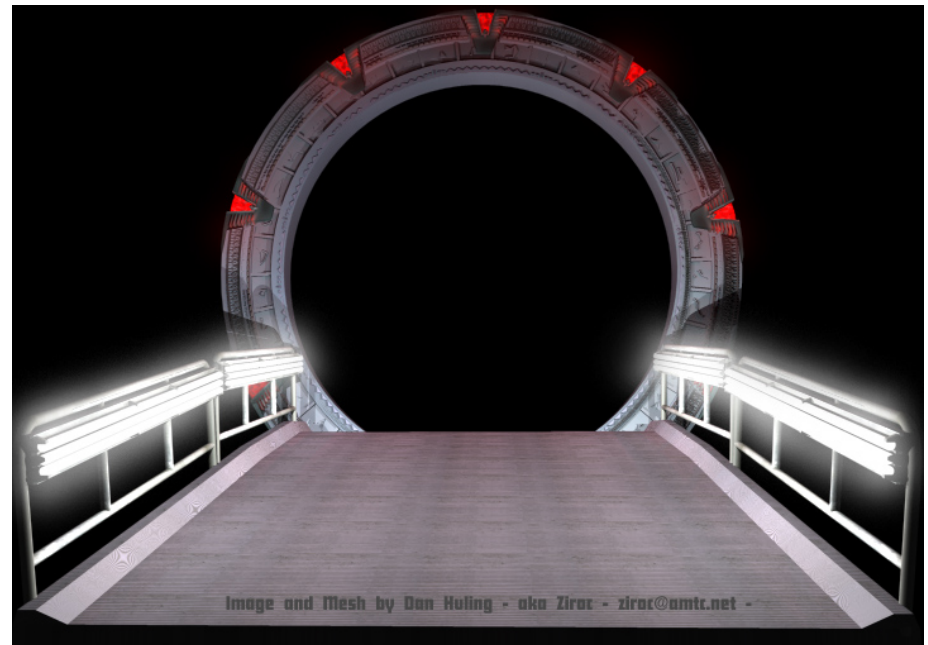


Learning Objective 5

-Curved, transparent protective layer



-Where **light first enters** the eye



-
- Opening right behind the _____
 - Black small circle in the middle of the eye
 - Dilates when light is dark

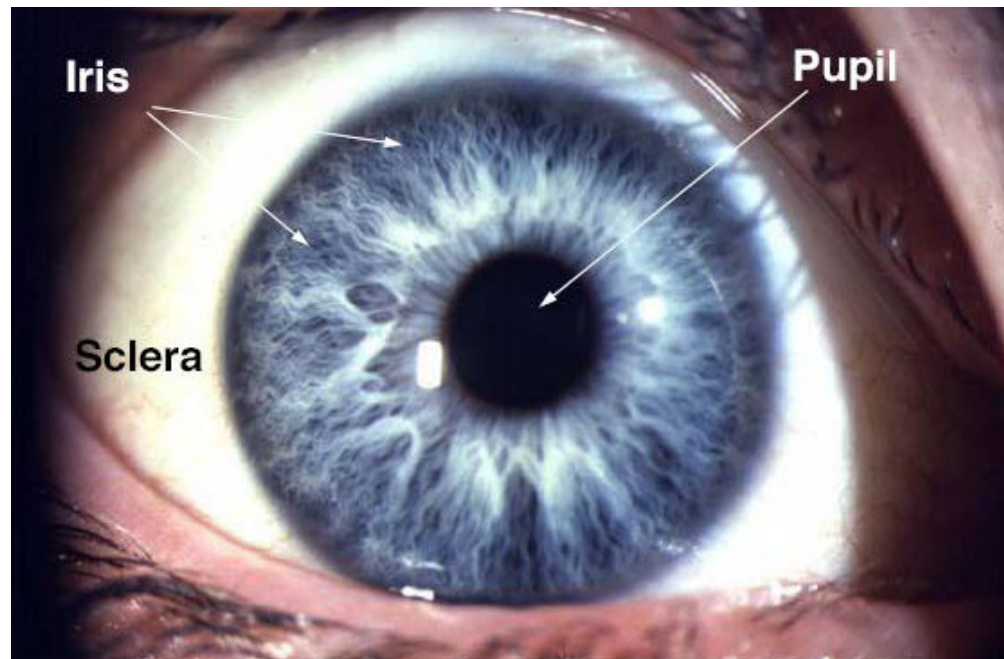
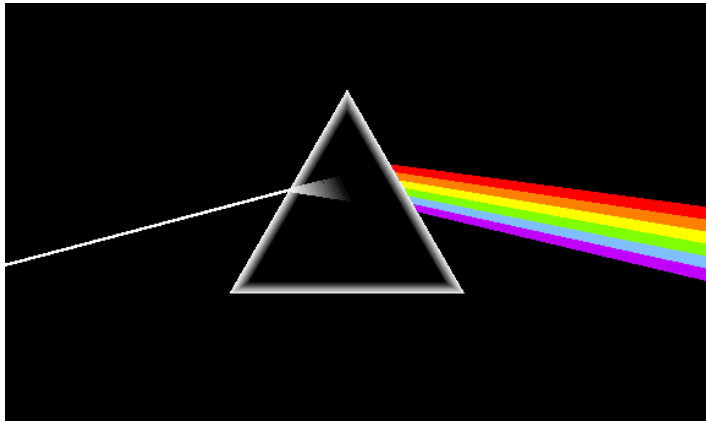


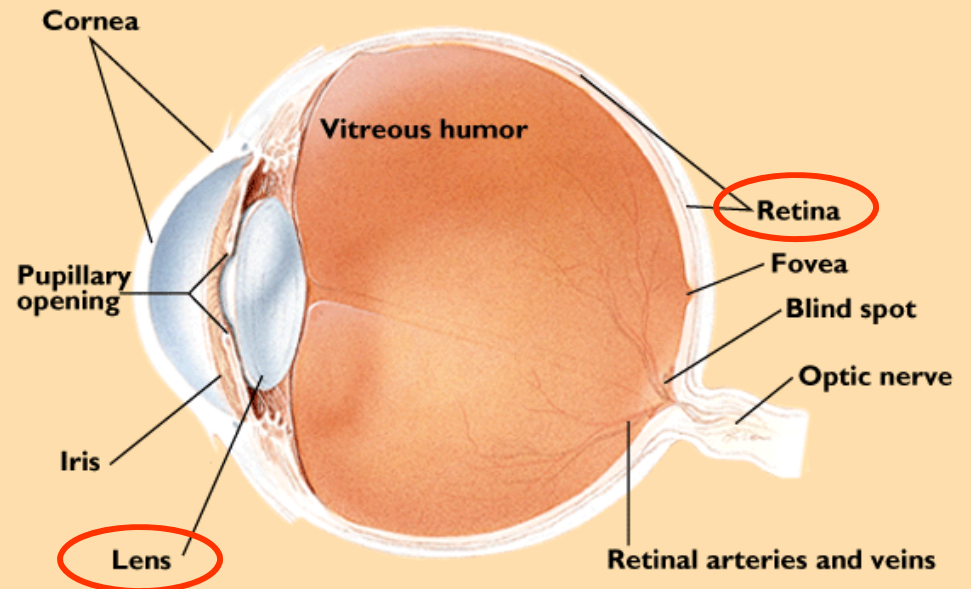
Fig. 1. View of the human eye

-
- Works with the _____ to bend the light rays so that they can be properly focused on the retina

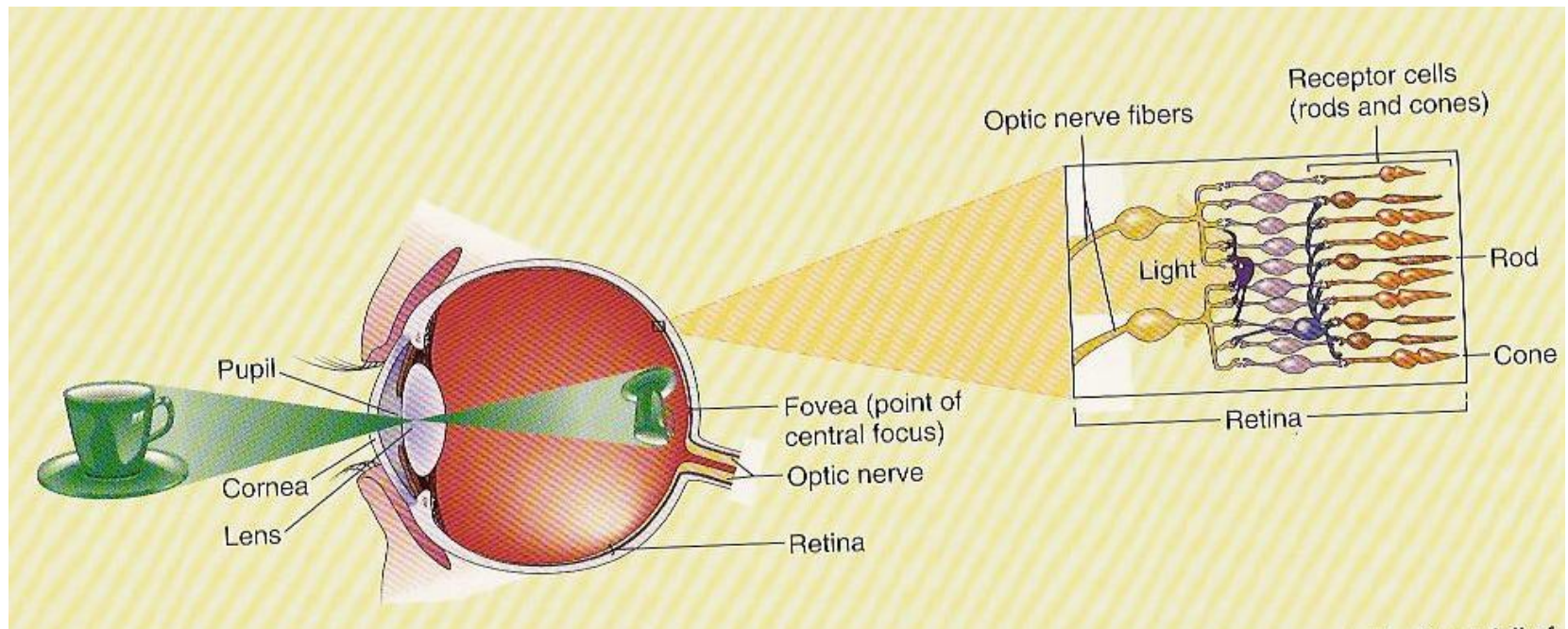


A Cross-Section of the Human Eye

The Major Parts of the Human Eye



-
- Surface on the back of the eye that reads images
 - Images are flipped upside down

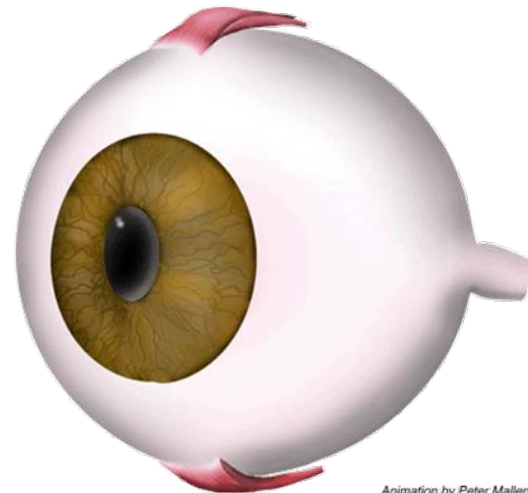


_____ in the Eye

- _____
 - Rods
 - Cones
- _____

_____ in the Eye

- In the _____, the incoming stimulus is converted to neural activity
 - _____ responsible for this process
 - Rods
 - Cones



Animation by Peter Mallen

Rods and Cones

- ---

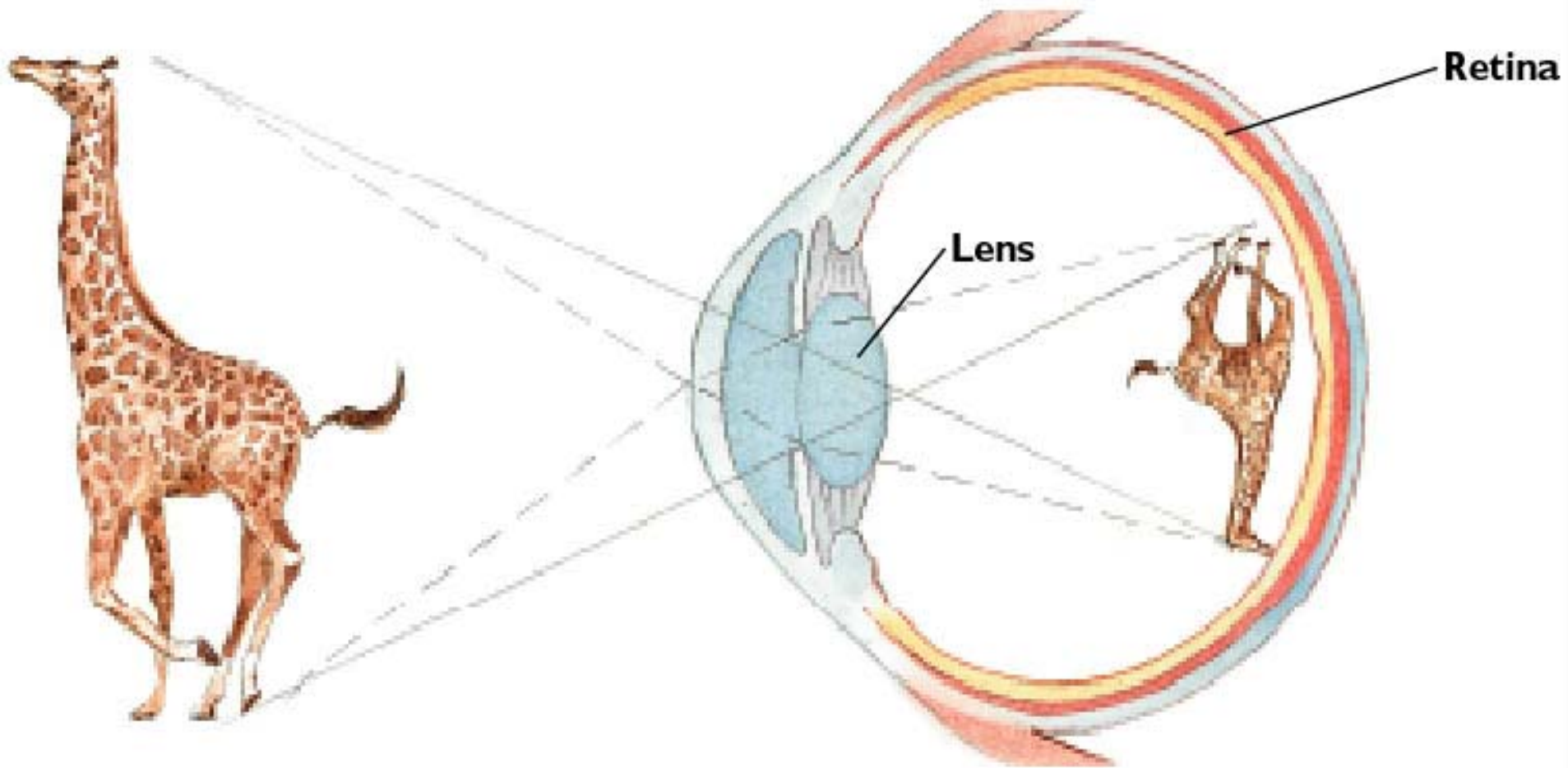
 - allow sight when light is dim
(light sensitive)
 - Cannot discriminate between

- ---

 - Less light sensitive
 - Can discriminate between colors



The Lens and the Retinal Image

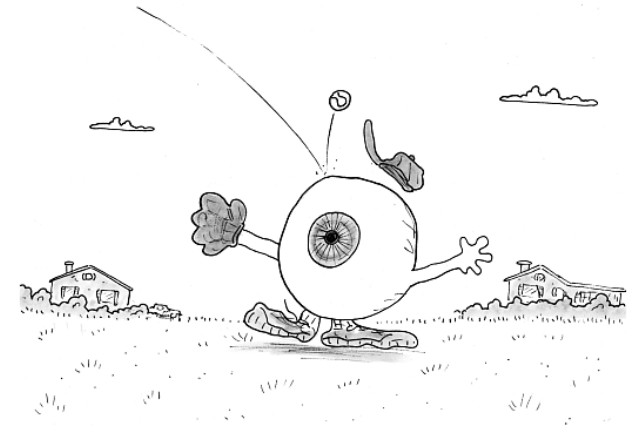


What is a _____ ?

- The _____ (rods, and cones) are all around the inside of the eye,
- except for the place where the _____ comes in to take signals
- So, the light images that fall on this part of our eye cannot be seen (_____)

DOCTOR FUN presents THE EYES HAVE IT

eyes-007

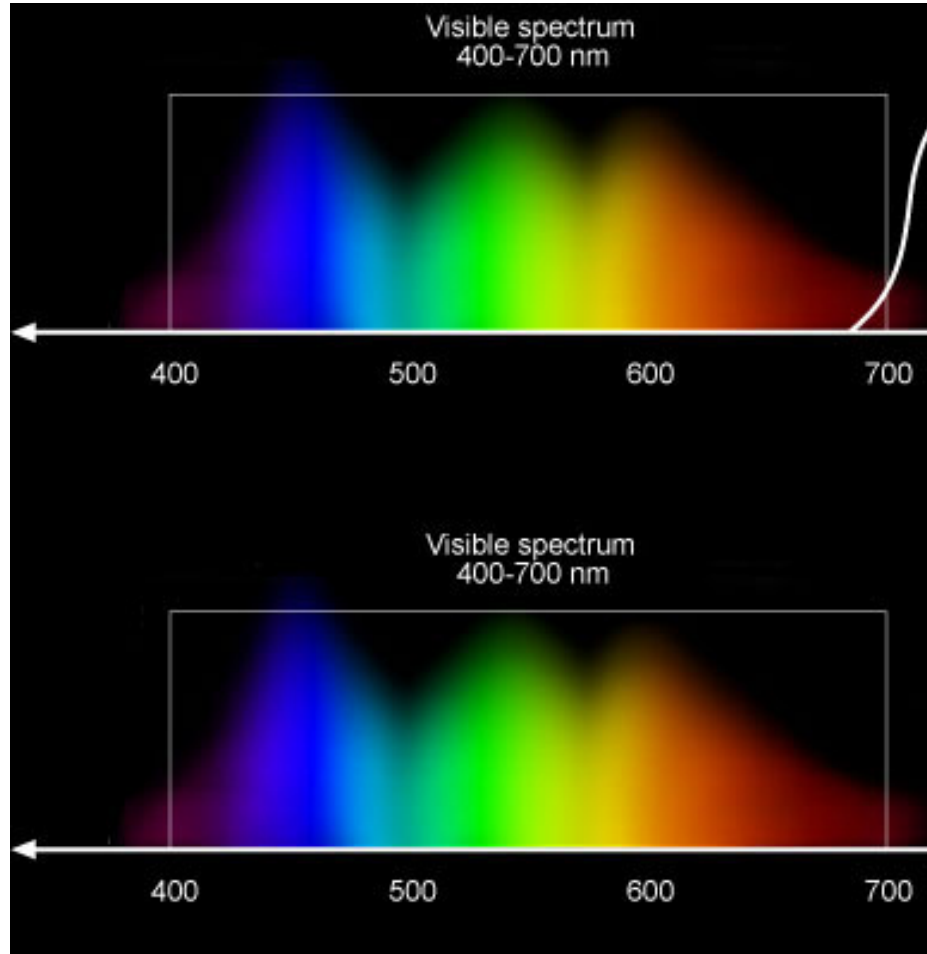


Copyright © 2000 David Farley, d-farley@biblio.org
<http://biblio.org/Dave/dr/fun.html>
This cartoon is made available on the Internet for personal viewing only. Opinions expressed herein are solely those of the author.

A Cr
The Ma

Bobby's blind spot was his Achille's heel.





Aspects of Color

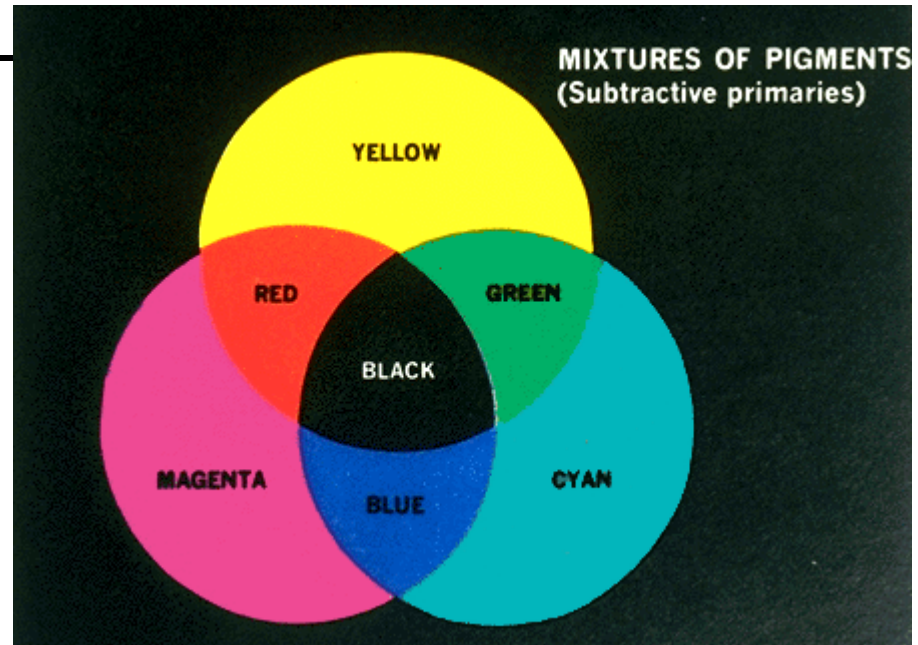
- _____

- _____

- _____

- **Color**

- **Determined by the dominant**



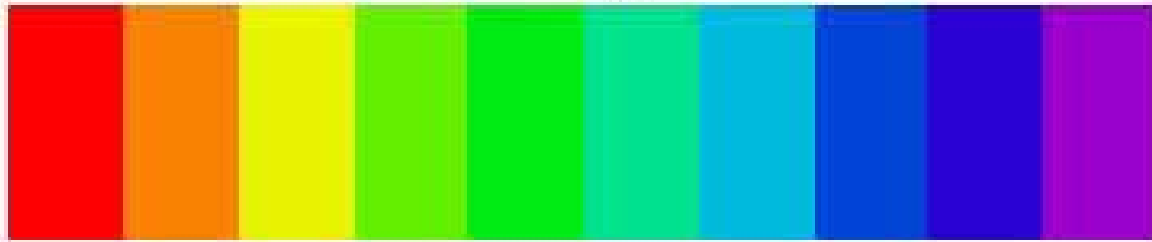
-
- Intensity of the wavelengths that make up the colors you see.



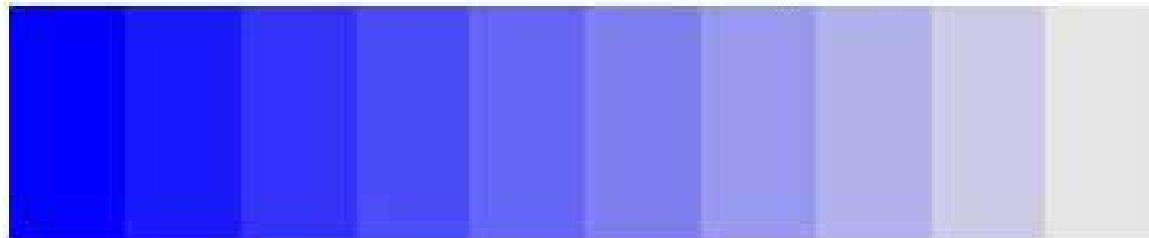
-
- Purity of the color



Hue Changes



Saturation Changes



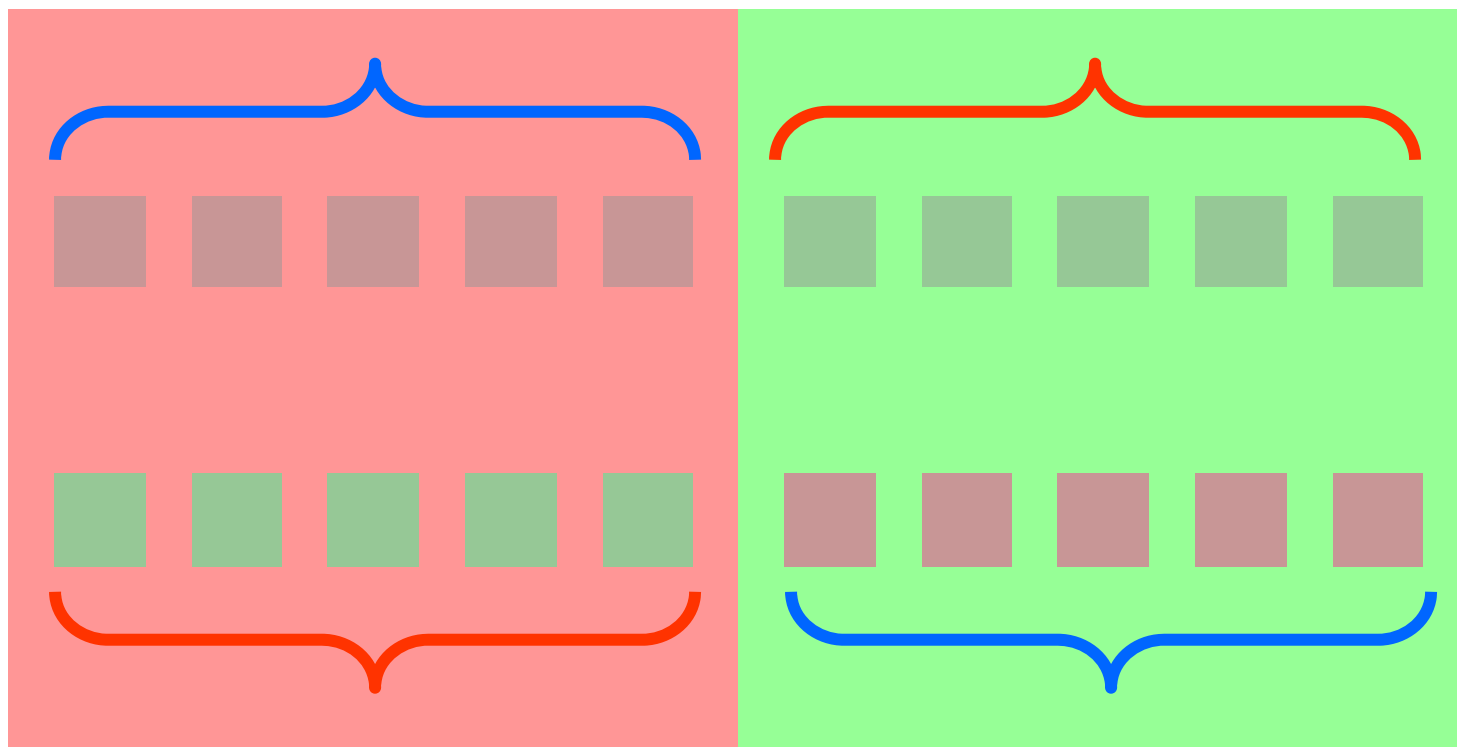
Brightness Changes



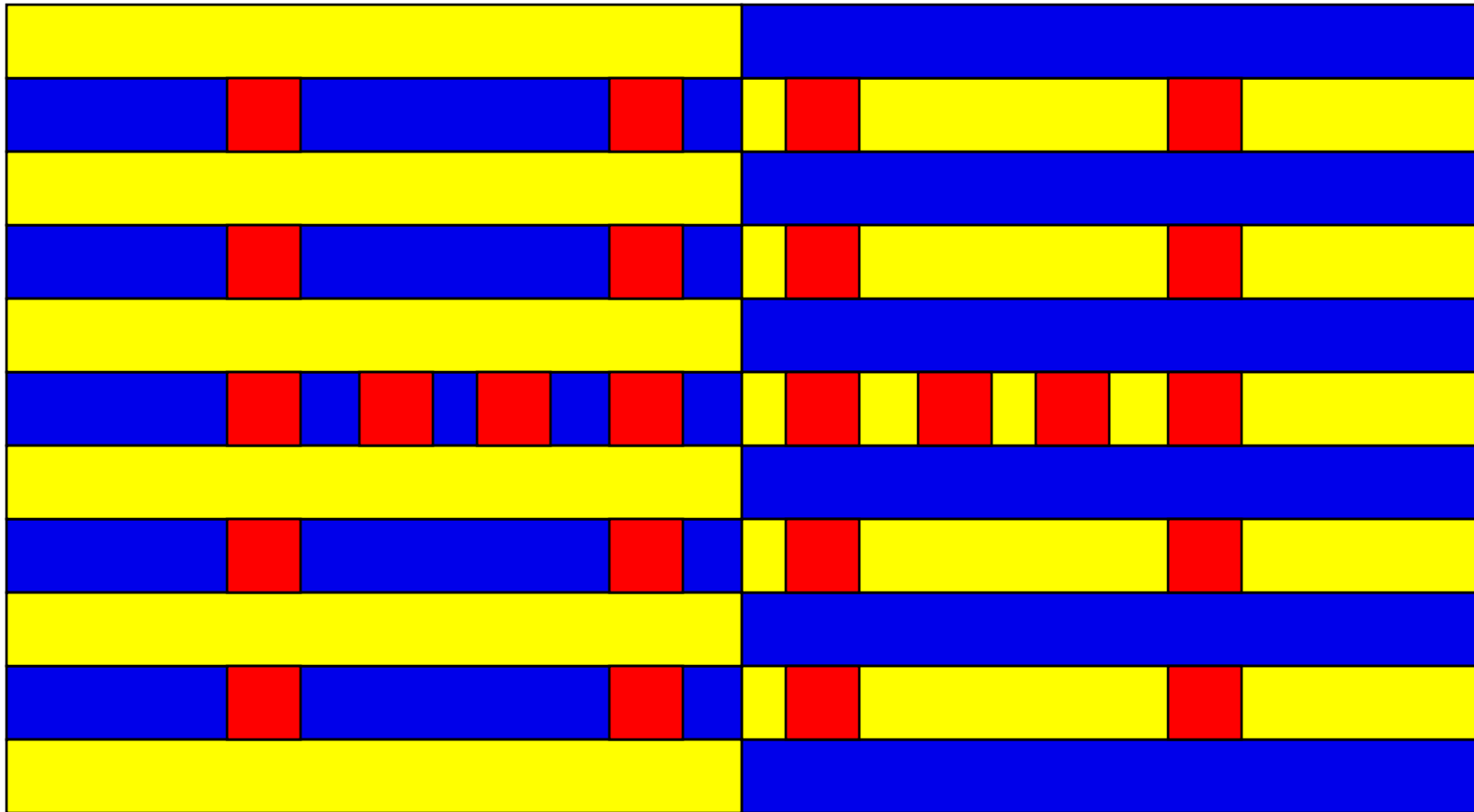
Theories of Color

- _____ theory
 - Blue, Green and Red light can mix to make any other color
 - Doesn't explain afterimages
- _____ Theory
 - Three pairs of opposing sense cells that inhibit its counterpart
 - Red/green, blue/yellow, black/white pairings
- Theories combine to explain color vision

Same color?

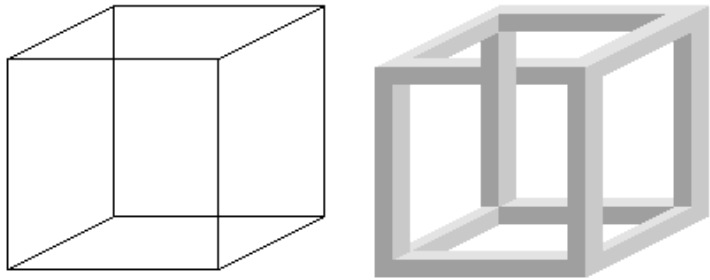


Simultaneous Color Contrast



-
- Gestalt principles describe the brain's organization of sensory building blocks into meaningful units and patterns.

Perceptual Organization



- Drawings that one can perceive in different ways by reversing



- ---

Psychology

- The whole is different from the sum of its parts.

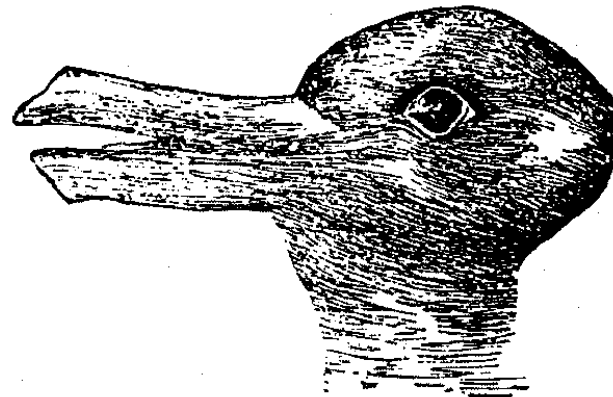
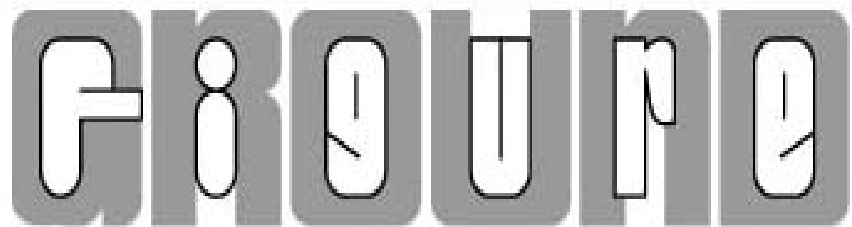
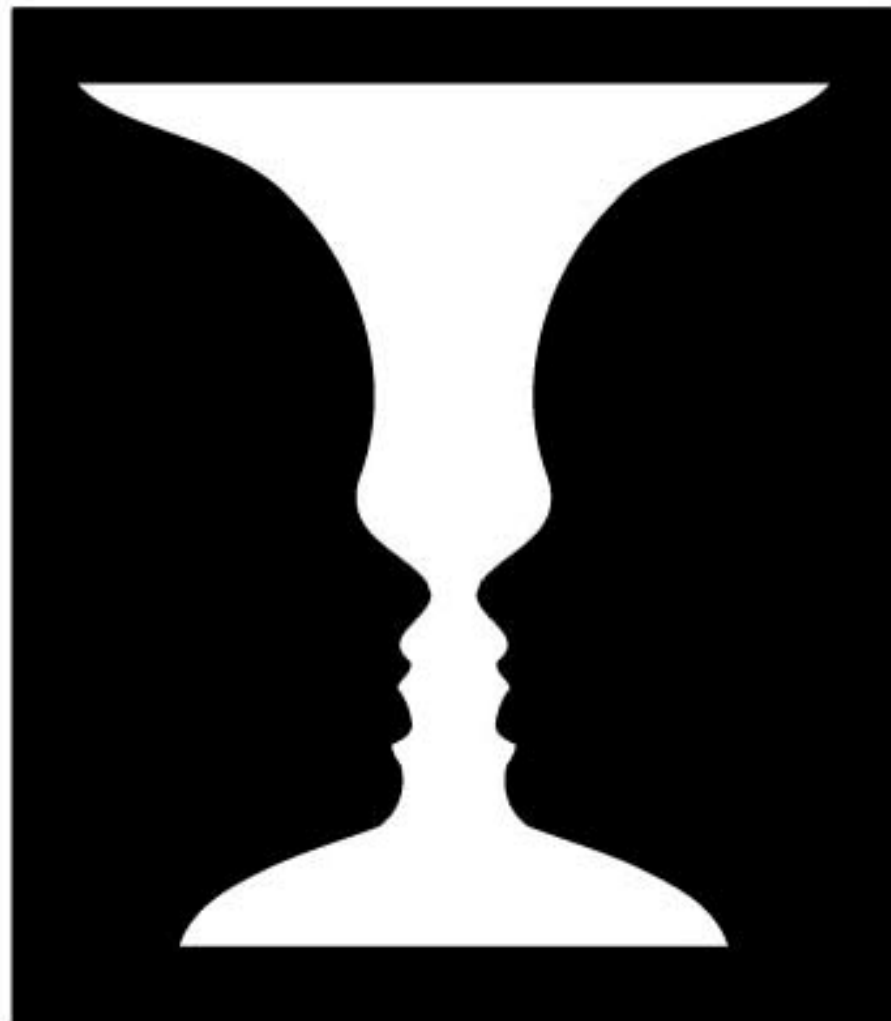


Figure and Ground

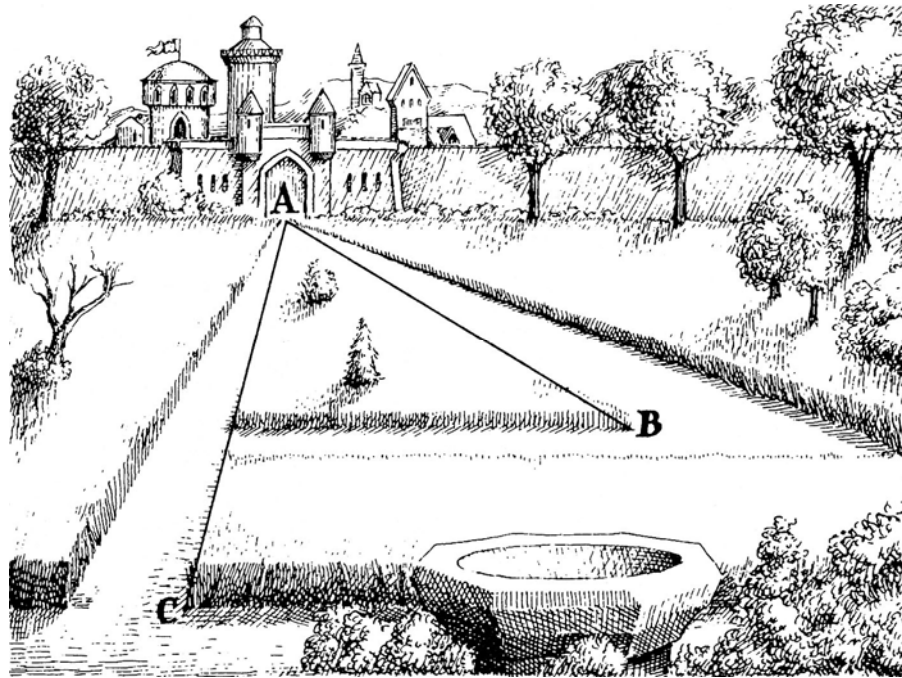


(A)



(B)

Which Line Is Longer?
A-C (left) or A-B (right)?



Perceptual Organization

Laws of Grouping

- ---

 - Seeing 3 pair of lines in A
- ---

 - Seeing columns of orange and red dots in B
- ---

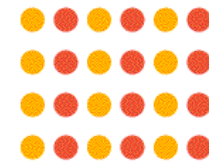
 - Seeing lines that connect 1 to 2 and 3 to 4 in C
- ---

 - Seeing a horse in D

A. Proximity



B. Similarity



C. Continuity

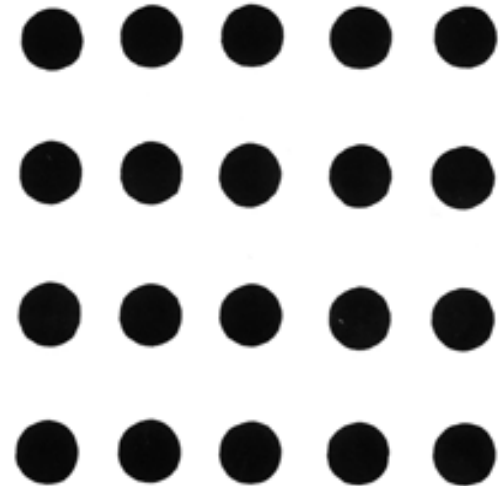
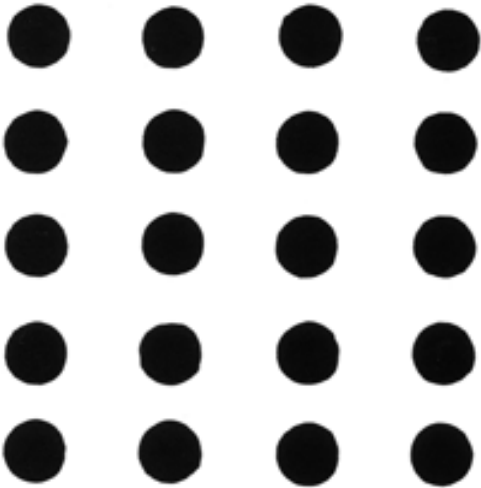


D. Closure

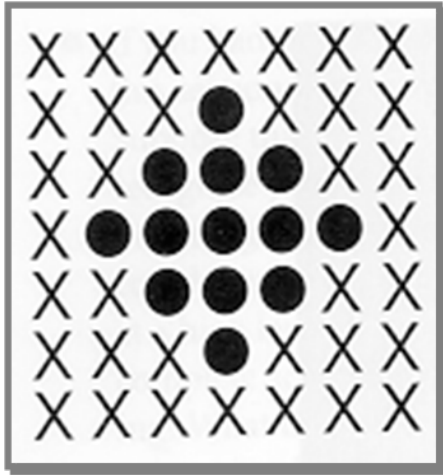


Law of Proximity

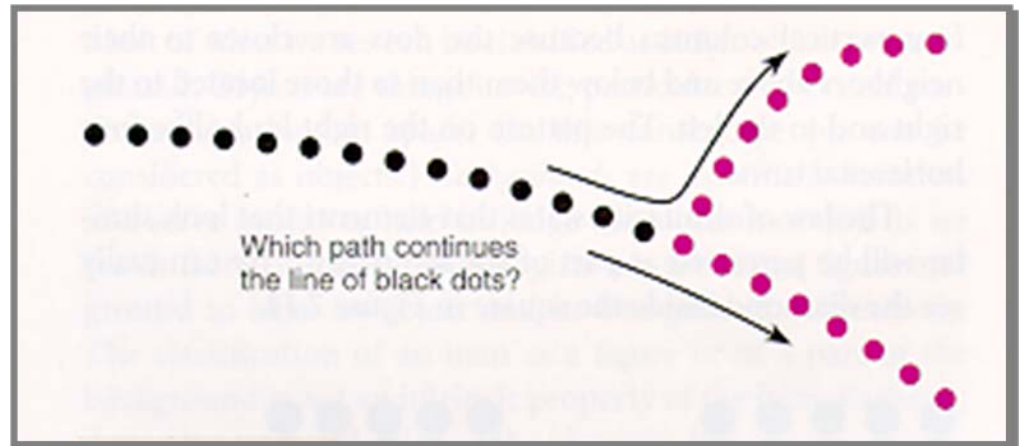
The Gestalt Principle of Proximity



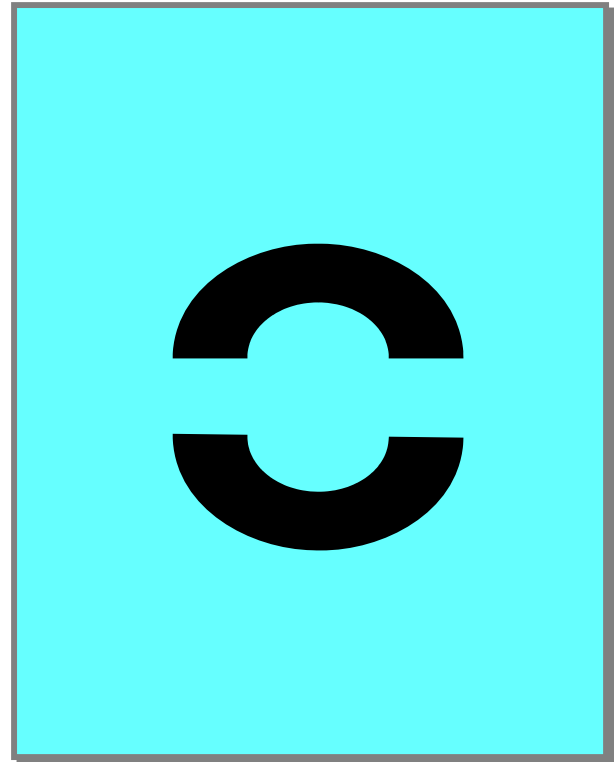
Law of Similarity



Law of Continuity



Law of Closure



Depth Perception



Visual System

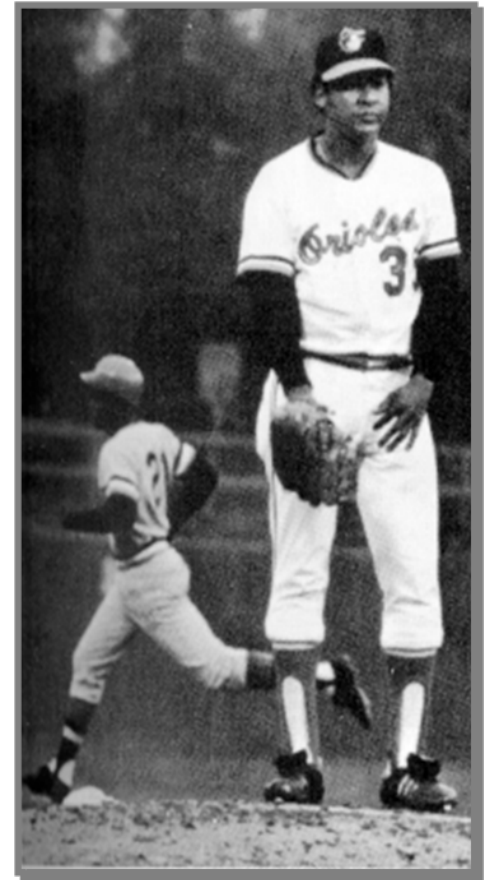
Stimulus Cues

Stimulus Cues for Perception of

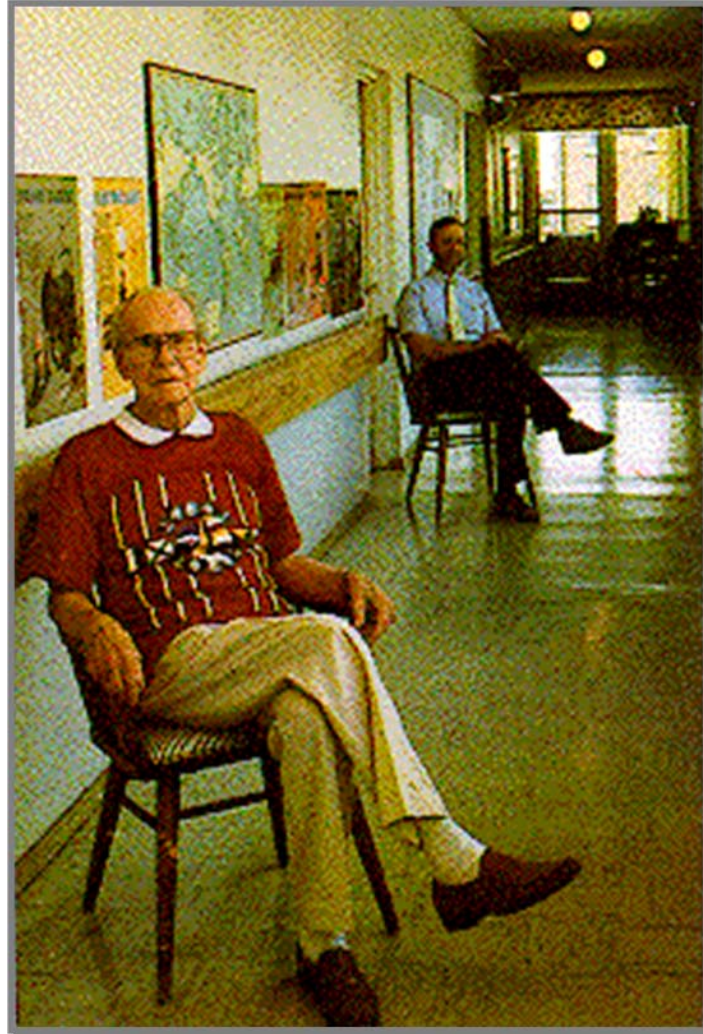


- _____
 - Height in the _____
 - _____
 - _____
- perspective

Relative Size



Height in the Visual Field



Interposition



Linear Perspective

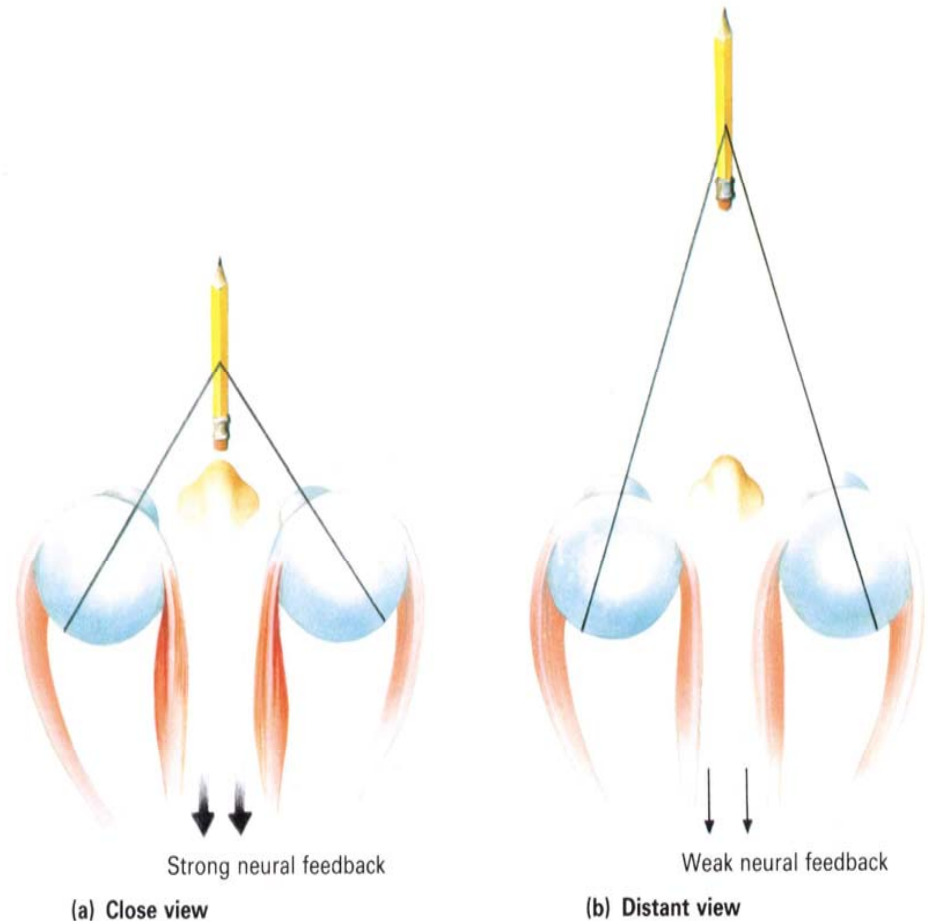


Cues Based on Properties of the Visual System

- ---

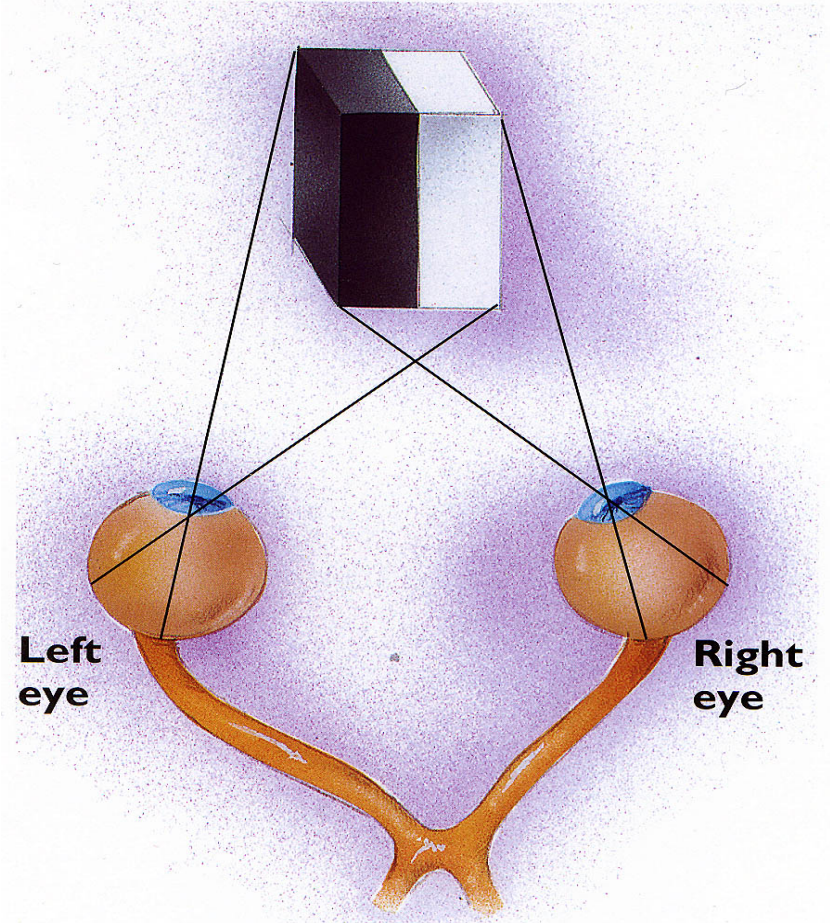
 - Due to changes in shape of the lens as it focuses
- ---

 - Due to rotation of the eyes so the image can be projected on each retina



Cues Based on Properties of the Visual System

- _____:
Due to the differences between the retinal images received by each eye



**Images go to brain
where they are compared**

Perception of Motion

- Movement of the eyes and head.
- _____ : Rapid
_____ in the size of an
image so that it fills the

- _____ : Tendency to
perceive movement when a series of
still images appear, one at a time, in

-
- The perception that objects maintain their _____ despite changes in their retinal image.

- _____ constancy
- _____ constancy
- _____ constancy

Size Constancy



Shape Constancy

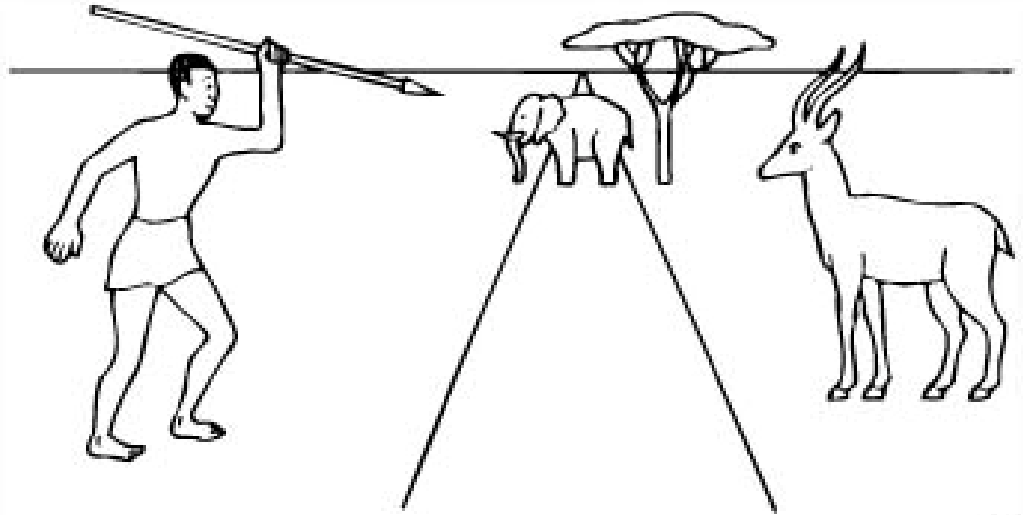


Brightness Constancy



Culture and Depth Cues

**Which
animal
is closer to
the
hunter?**





How do I recognize familiar people?

- The brain analyzes incoming patterns of info and compares that pattern to info stored in memory.
- If a match is found, recognition takes place and the stimulus is put into a perceptual category.

How Does Recognition Occur?

- _____ Processing:
_____ of the stimulus are analyzed and recombined to create the perceptual experience
- _____ Processing:
Influenced by _____ :
schemas, expectations, and motivation

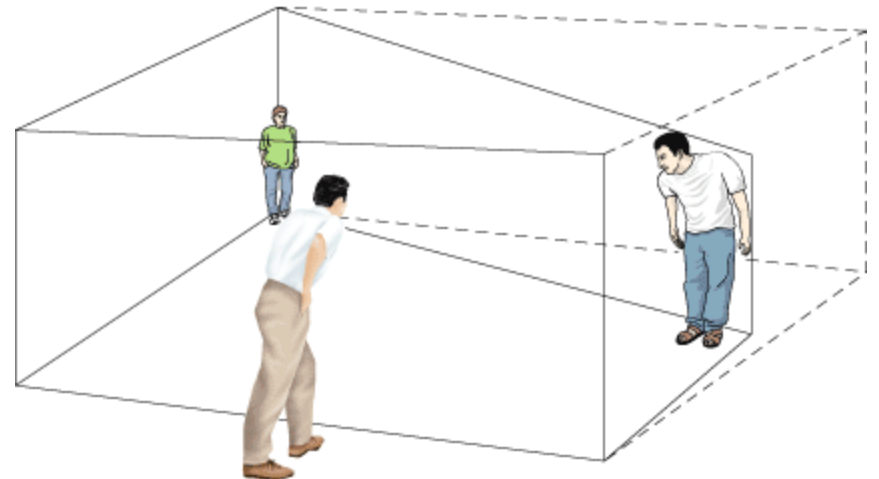
Top Down Processing

- The bank robbers rode away from the scene of the crime in their getaway car 
- My tree-hugger friend told me to recycle my used soda pop can 

Perceptual Constancies

The Ames Room

- A specially-built room that makes people seem to _____ as they _____ in it
- The room is not a _____, as viewers assume it is.
- A single peephole prevents using _____.



Depth and Dimension

- _____
 - The use of visual cues to estimate depth and distance.
- _____
 - A _____ cue involving the turning _____ of the eyes as an object gets closer.
- _____ Disparity
 - A _____ cue whereby the _____ an object is, the more different the image is in each retina.

Depth and Dimension

- Devised by Eleanor Gibson and Richard Walk to test

_____ in
_____.

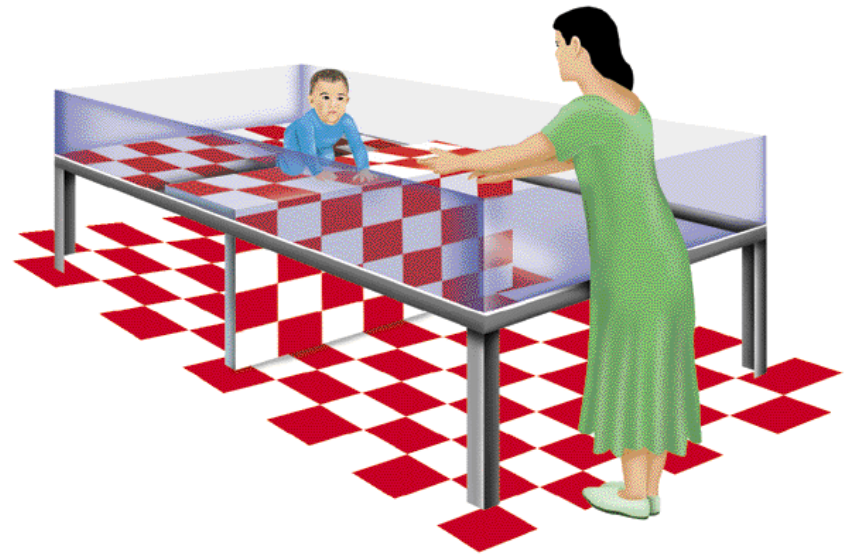
- Provides

_____ of a
cliff.

- _____ stands
across the gap.

- Babies are not afraid until
about the age they can

_____.



Perceptual Set

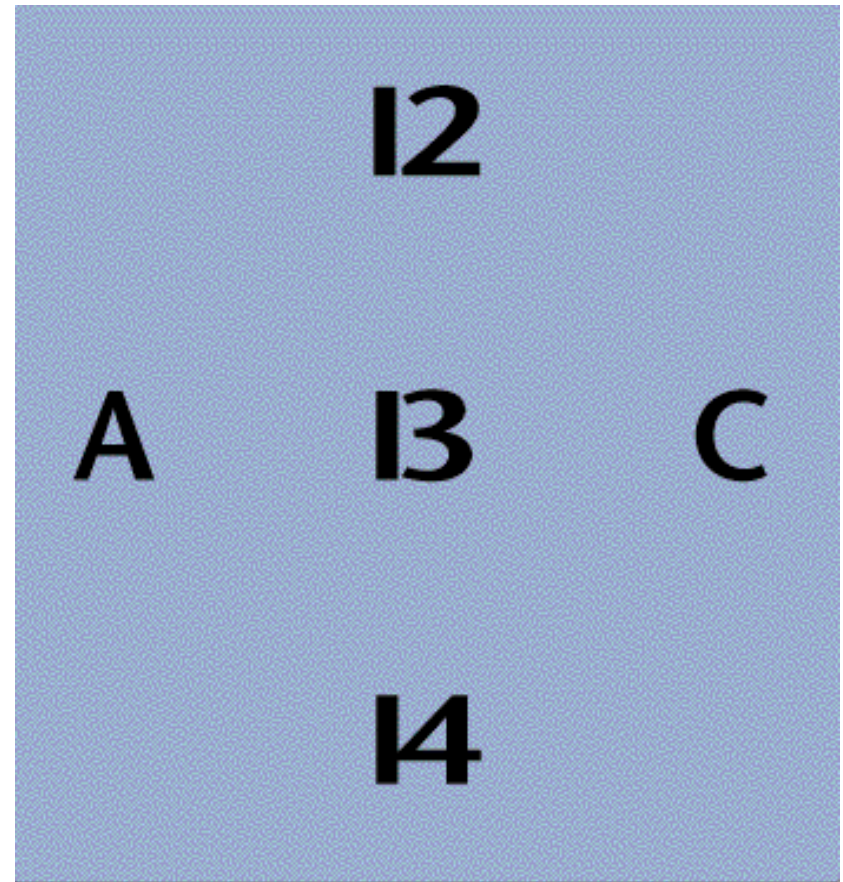


- What is seen in the center figures depends on the _____ in which one looks at the figures:
 - If scanned from the _____, a man's face is seen.
 - If scanned from the _____, a woman's figure is seen.

Perceptual Set

Context Effects

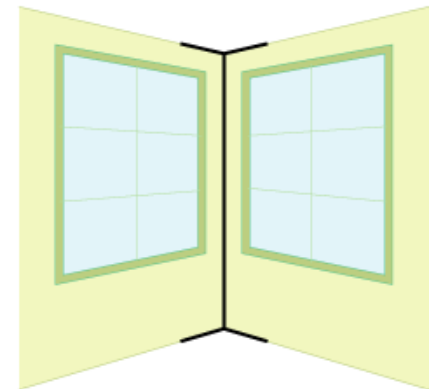
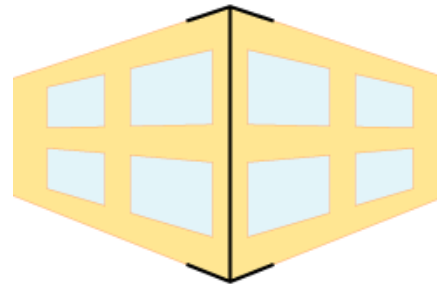
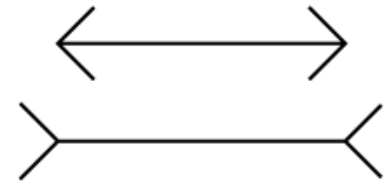
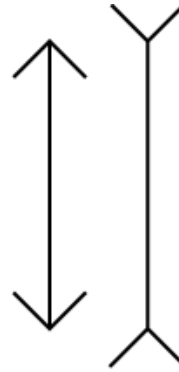
- The same physical stimulus can be interpreted differently depending on _____,
e.g., _____.
- When is the middle character the letter B and when is it the number 13?



The World of Illusions

The _____ Illusion

- Illusion in which the perceived length of a line is altered by the position of other lines that enclose it



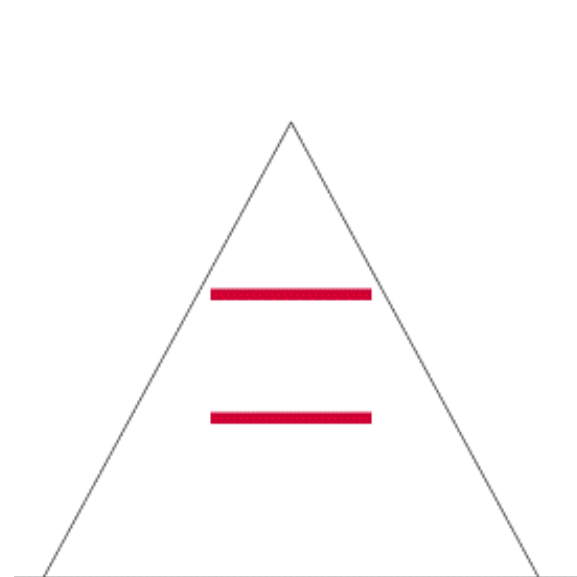
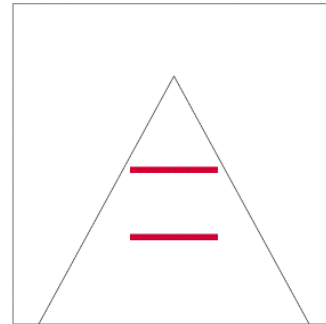
The World of Illusions

The _____ Illusion

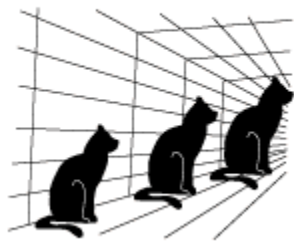
- Illusion in which the perceived line length is affected by

_____ cues.

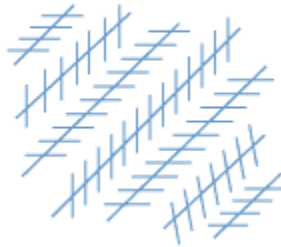
- Side lines seem to _____
- _____ seems farther away
 - But the retinal images of the red lines are equal.



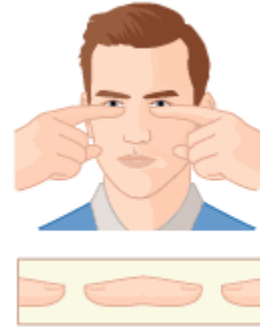
Fooling the Eye



(a)



(b)



(c)



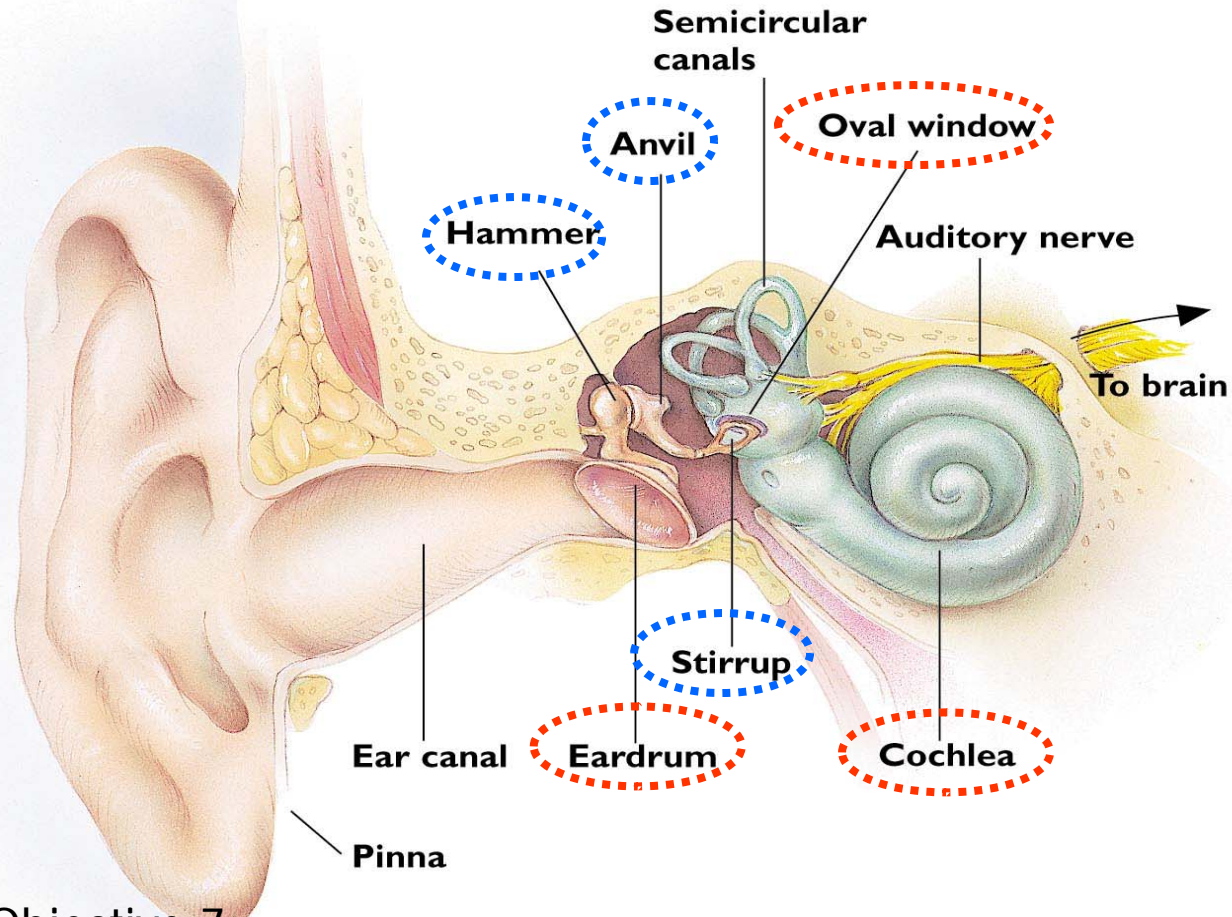
HEARING



Accessory Structures and Transduction in the Ear

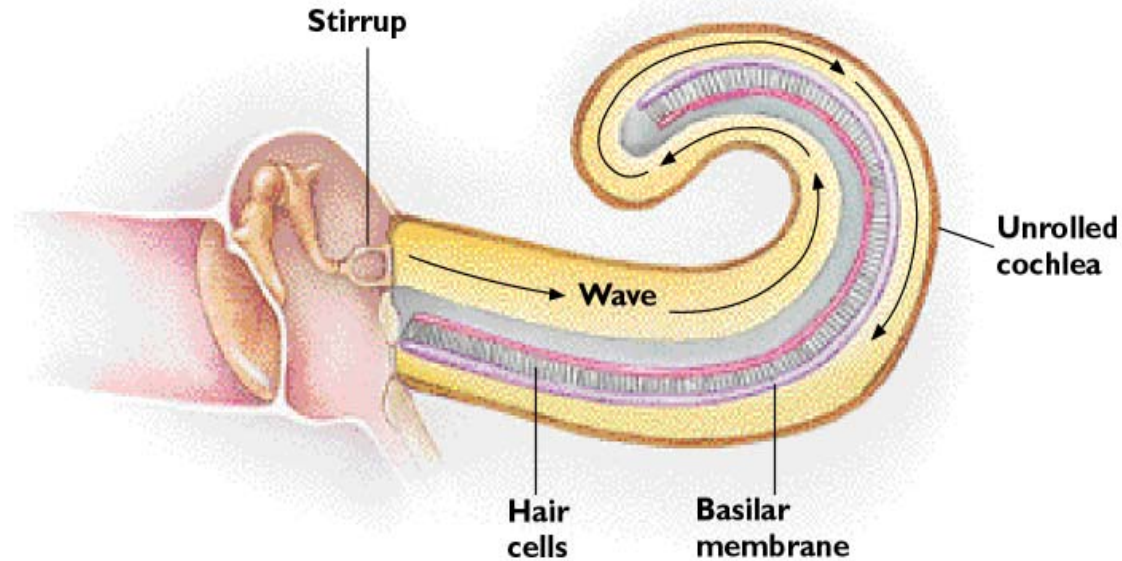
- _____
 - _____ (tympanic membrane)
 - _____, anvil, and stirrup
 - _____ window
- _____
 - _____
 - _____ membrane
 - _____ cells

Structures of the Ear



Learning Objective 7

The Cochlea



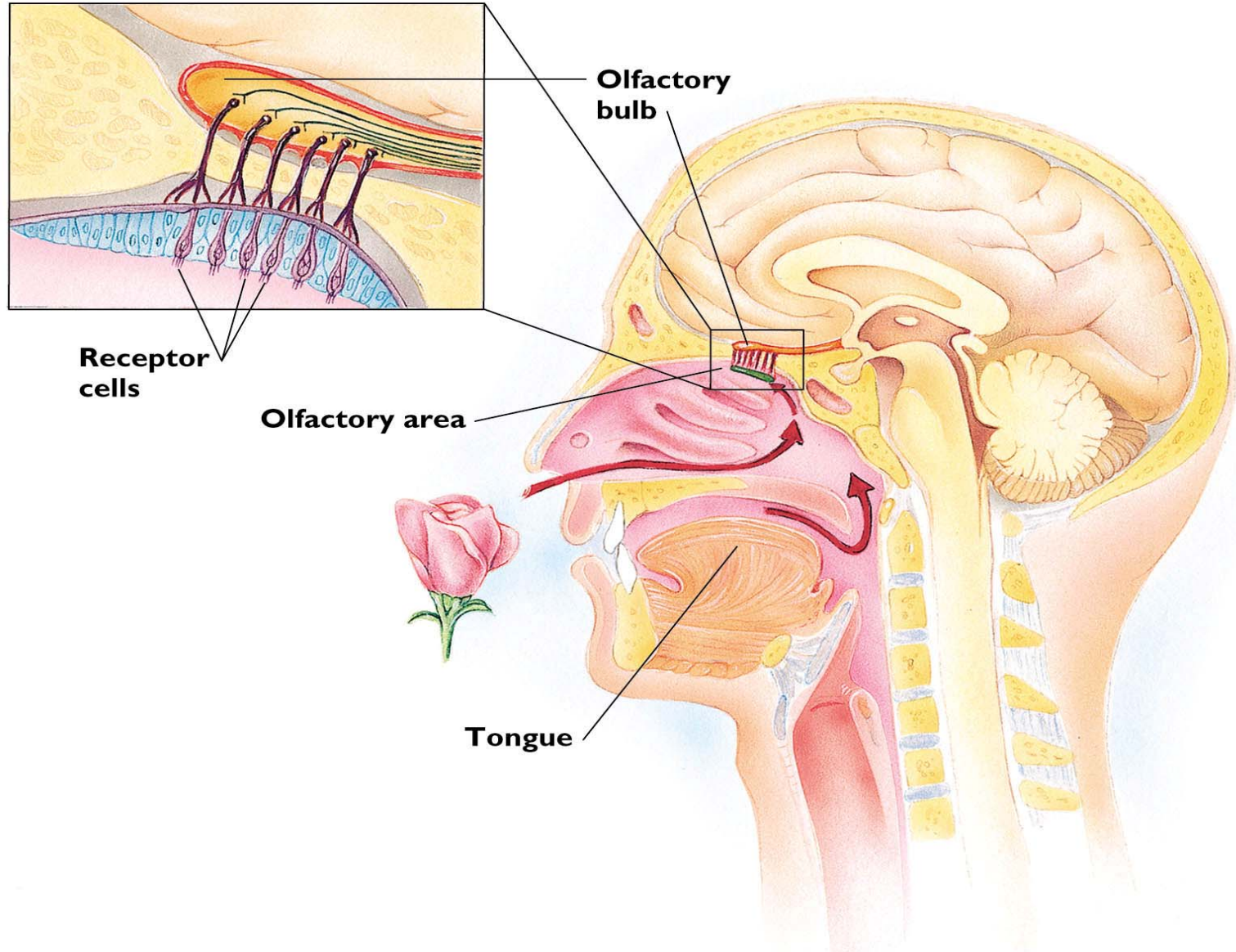
Movement of the fluid within the
_____ deforms the
_____ of the
_____, which then converts
sound waves into neural activity
(_____)

The Chemical Senses:
Olfaction and Gustation
(Smell and Taste)

The Pathway for Olfactory Information

- Accessory structures
 - _____, opening in the _____ at back of mouth
- Transduction
 - Receptors make a direct connection to the _____ bulb located in the brain
 - Olfactory information does not pass through _____

The Olfactory System



Gustation

- Accessory structures
 - _____, roof of _____,
back of _____
- _____ (a collection of taste buds)

Psychological and Cultural Influences on Perception

- We are more likely to perceive something _____.
- What we _____ can affect what we _____.
- _____, such as _____, can influence perceptions of sensory information.
- _____ based on our previous experiences influence how we _____ the world.
- All are influenced by our _____.