

The world of visual culture I



Priyadarshi Patnaik

Professor

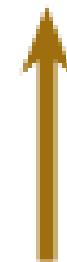
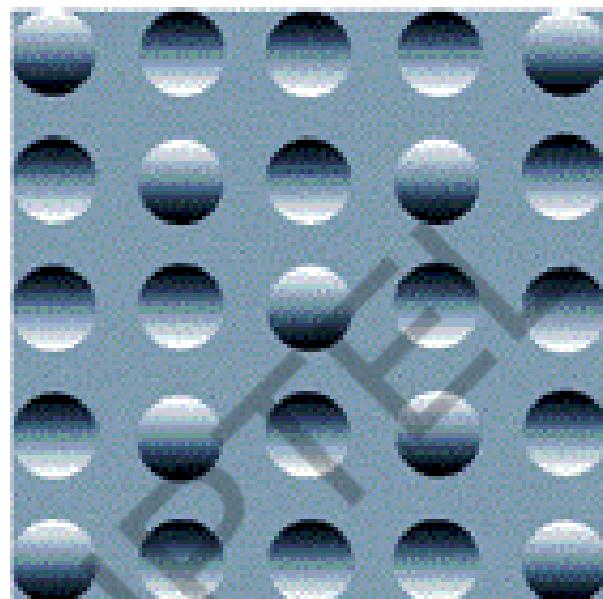
Department of Humanities & Social Sciences
Indian Institute of Technology Kharagpur

*MOOC
Soft skills
development*

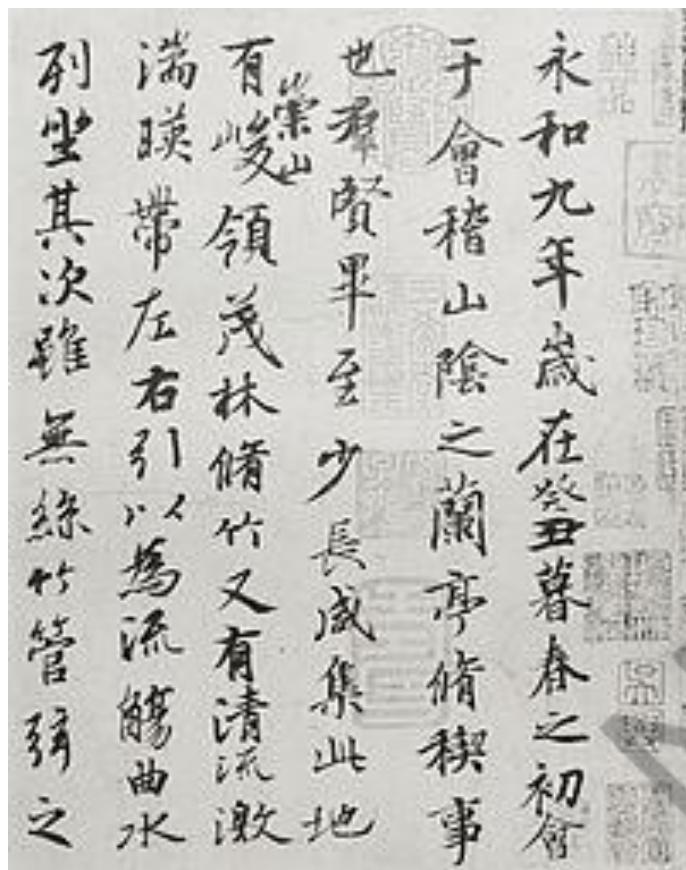
Overview

- Introduction
- Relevance of visual culture
- Changing roles of visuals in our culture
- Key features
- References

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Chinese



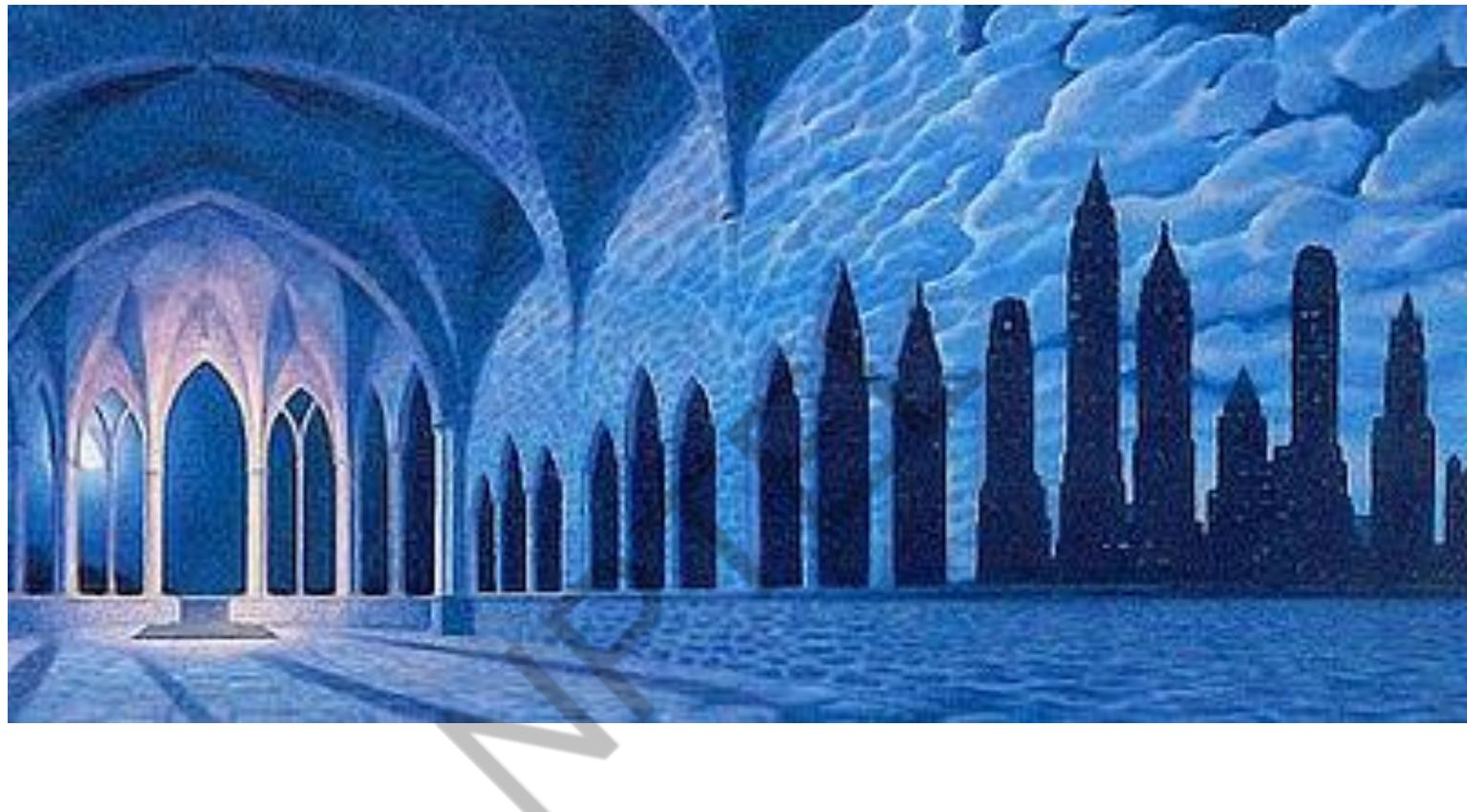
Arabic

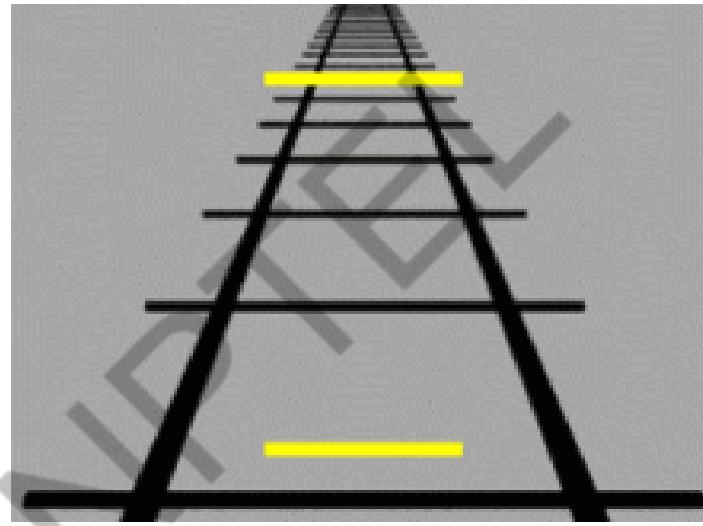


Image source: Wikipedia









Why is visual culture relevant?

- Modern life takes place on screen?
 - TV
 - PC
 - Screen
 - Real/Reel life
 - Calvin and Hobbs

The medium is the message

- Can looking (the gaze) instead of reading (text) or hearing transform the way we perceive the world?

Mediation

- What is mediation?
- The notion of the medium
- What lies beyond

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Surface vs. content

- What lies beyond the surface
- The problem of simulacrum

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- **Arctica:** Created 3/11/04 using [Lightwave 8.](#)
This image was created to practice with sub-surface scattering techniques. Yes, I know penguins don't live at the north pole. The title is just a generic reference to polar regions.
- From [www.digitalblasphemy](#)

What is visual culture?

The immense amount of visuality that we are involved with and have to interpret makes everyone from film critics to sociologists interested in it.

What emerges is visual culture.

Visual events with information, meaning or pleasure is sought by the consumer

Seeing is not knowing

Some one is always watching and recording
yet

- TWA flight 800 in 1996 in New York
- The Abduction of Jamie Bulger in 1995
 - Smart Bombs of Gulf War

Seeing, Power and Knowledge

- Seeing has always been significant in the West
 - Spiritual Vision
 - Perspective
 - Forensic, eye signature and visuality
 - Photographic evidence (Benjamin)
-
- What about the Indian context – *sruti*?

Seeing vs. Visualizing

The growing tendency to visualize things that are not visual

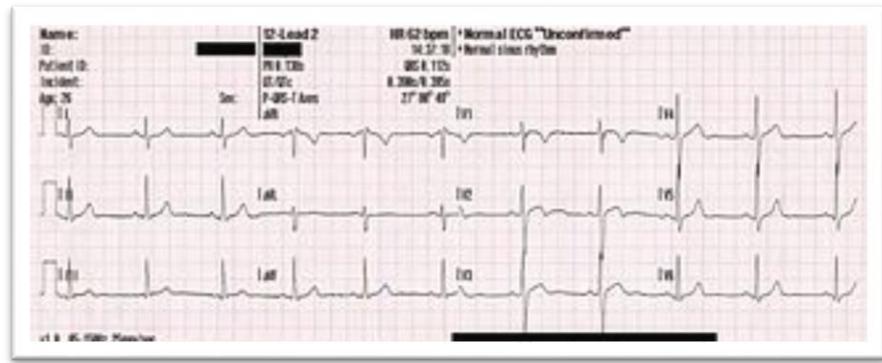
Heidegger: world picture does not mean the picture of the world but the world conceived and grasped as a picture - the essence of the modern age

Visual culture does not merely depend on pictures themselves but the modern tendency to picture or visualize existence



Image source: Wikipedia

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- Heartbeat
- Heat
- Smell stimulation
- The language of metaphors – primarily visual

Visual as Supplement

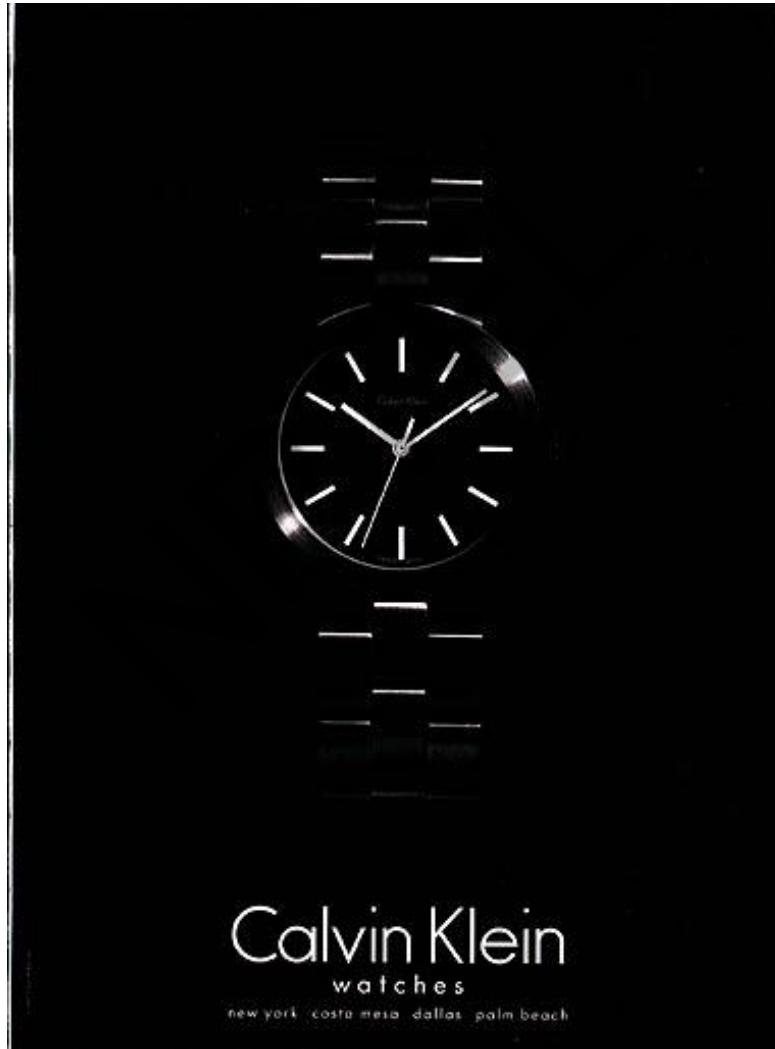
- William Blake – Illuminated MS
- Books with illustrations

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Blake: Songs of Experience



Text as Supplement to Visual



Advertisement – a case study

- View the two ads.
- What differences do you mark?

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When THOMAS A. EDISON was known as "Little Al"



He accidentally splashed mud on a beautiful Paisley shawl—attempts to clean it failed—65 years later Lux restored this treasured heirloom to loveliness

"**M**Y Mother was out walking one day with her Mother who wore a beautiful Paisley Shawl about her shoulders.

"As they were passing a warehouse, a little boy jumped from a wagon to the sidewalk, immediately in front of them. The plank was loose and a big splash of muddy water literally covered the beautiful Paisley.

"Grandmother attempted to clean it, but such 'soaps' as she had were ineffectual.

"The little boy who soiled the shawl was then known as little Al Edison, now known as Thomas A. Edison. As near as Mother could remember, this incident occurred in 1855. In 1920 the Paisley was given a thorough Lux washing and restored to its original beauty—after 65 years!"

Mrs. Jean Pratt, Chicago, Ill.



Now your whole Monday's Laundry goes into its sparkling suds

All your clothes — your hands, too — repay this care

For years you washed all your fine things in marvelous, bubbling Lux suds and you saw them bloom with a fresher, sweeter beauty. You saw how soft and smooth Lux left your hands.

Then one Monday—a new idea! Joyfully you plunge *all* your clothes—the whole week's laundry—into rich active Lux suds. Such nice clothes, too—for which you have to pay so much more nowadays than formerly—really, they *do* de-

serve the care you give your silks and woolens.

With what deep satisfaction you fold away your laundry! Nor since the day you bought them have you seen your clothes look as beautiful as they do after their Lux-washing—colored ginghams and prints so bright and fresh, house linens so snowy white! And Lux is such a relief to your hands.

You'll be amazed to see how far a little Lux goes—it's really an economy to use it.



Get the Big

Convenient Package—New!

L. H. J. Sept 1925



No more rough red HANDS from washing dishes

Drop a few Lux flakes—just about one teaspoonful—into your dishpan. See the difference! Lux leaves your hands soft and smooth—white. It treats them as kindly as the finest toilet soap. Your hands quickly respond to this care—wash your dishes in Lux today! Lever Bros. Co., Cambridge, Mass.

A little Lux goes so far it's an economy to use it



1925

Image source:
Vintage Ad Browser



1980s

Image source:
Vintage Ad Browser

Interactivity

- Video games
- Internet
- Learning packages
- Is the visual passive any longer? What gets privileged here – space or time?

The Image as Everyday Life

- TV: soap opera, films, music videos
- Paintings, photographs: books in any setting
- The image became portable. With the internet, the image became virtual. The distinction between the real and the copy became problematized (computer art).
- Laptop: viewing, any space, any time.

Transformation of Function

- The transition from structured formal settings to the
 - unstructured. The image is no longer precious, holy,
 - to be placed on an alter and viewed.
-
- Transformation of function

Living within visuals

- *The Matrix*

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Select References

- *An Introduction to Visual Culture*, Nicholas Mirzoeff, RKP, 1999.
- *The Panopticon*. Henry Bentham. (Internet)
- From *Discipline and Punish*. Michael Foucault. Literary Theory. Rivkin and Ryan. Blackwell. 2001.
- The Birth of the Clinic. Michael Foucault. RKP.
- *Camera Lucida*. Ronald Barthes.
- Mark Hardin's Artchive (www.artchive.com)
- Unofficial Kalvin Klein Ads Archive (Internet)

Visual perception



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Overview

- Visual perception
- Its key components
- Form perception
- Depth perception
- Color perception
- References

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What is perception?

The diagram illustrates the process of perception as a combination of two main components. A large, light gray diagonal banner runs from the bottom left towards the top right. Along this banner, the word "Sensation" is written vertically in black capital letters above a plus sign (+), and the word "Interpretation" is written vertically in black capital letters below the plus sign.

Sensation
+
Interpretation

- In philosophy, psychology, and the cognitive sciences, **perception** is the process of attaining awareness or understanding of sensory information. The word "perception" comes from the Latin words *perceptio*, *percipio*, and means "receiving, collecting, action of taking possession, apprehension with the mind or senses."

- When external stimuli is transmitted to our brain through our senses – sensation
- Devoid of any definition, any interpretation, meaning
- The simplest building block
- But then it is taken up by the mind and analyzed
- Memory is stirred up, remembering used
- Sensation identified, matched, given a name, defined, interpreted and remembered for future use

- Part of what we perceive comes through the senses from the objects before us; another part always comes out of our own head

William James

Subjective perception

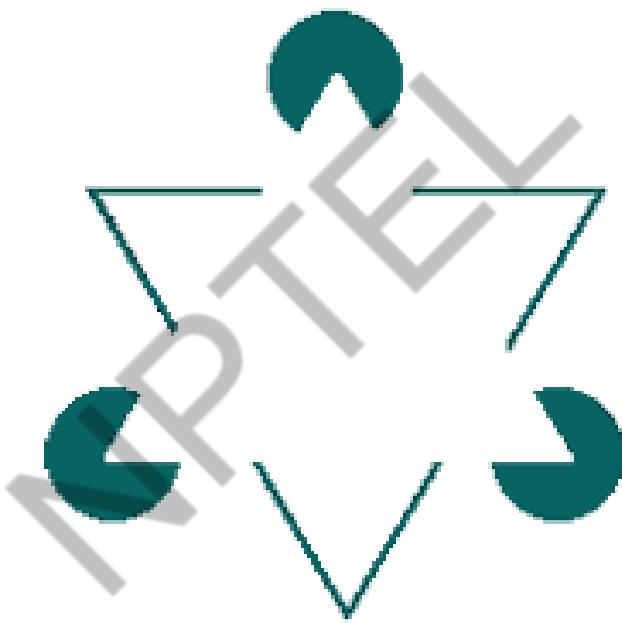


Image credit: Mark R. Homes @ National Geographic Society

- To resolve ambiguities and make sense of the world, the brain also creates shapes from incomplete data.
- The triangle you saw was developed by Italian psychologist Gaetano Kanizsa.

Illusion

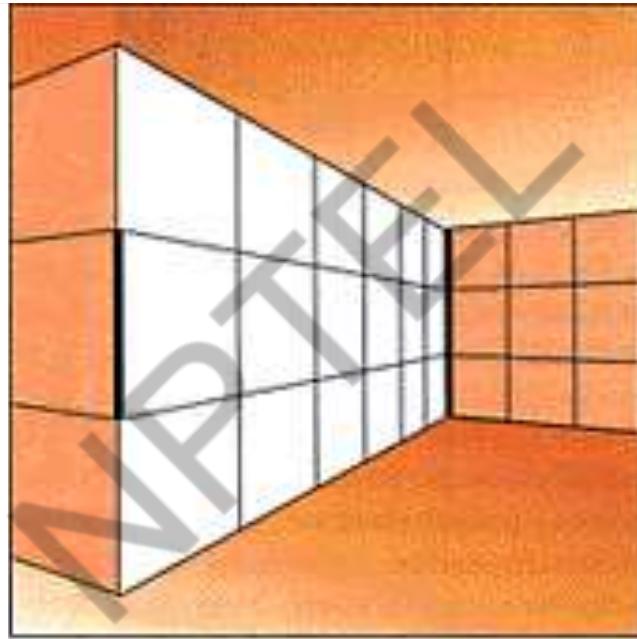


Image credit: Mark R. Homes @ National Geographic Society

- Illusion created because of “size constancy” effect to be discussed a little later.

Orientation

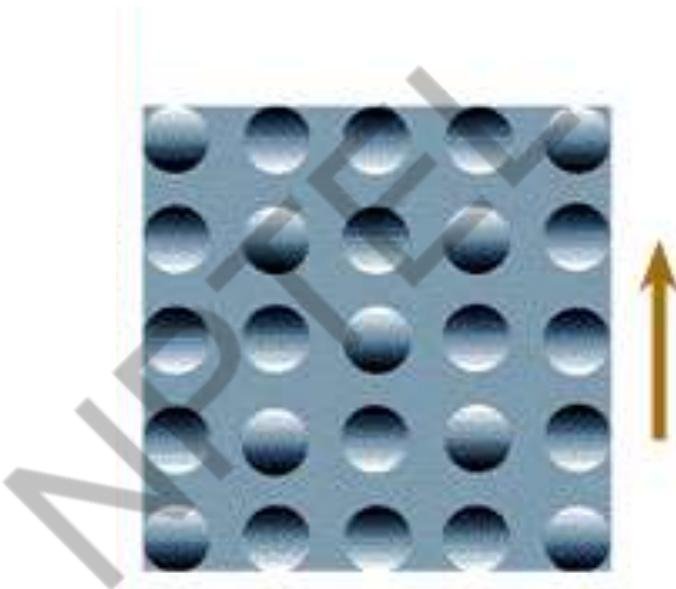
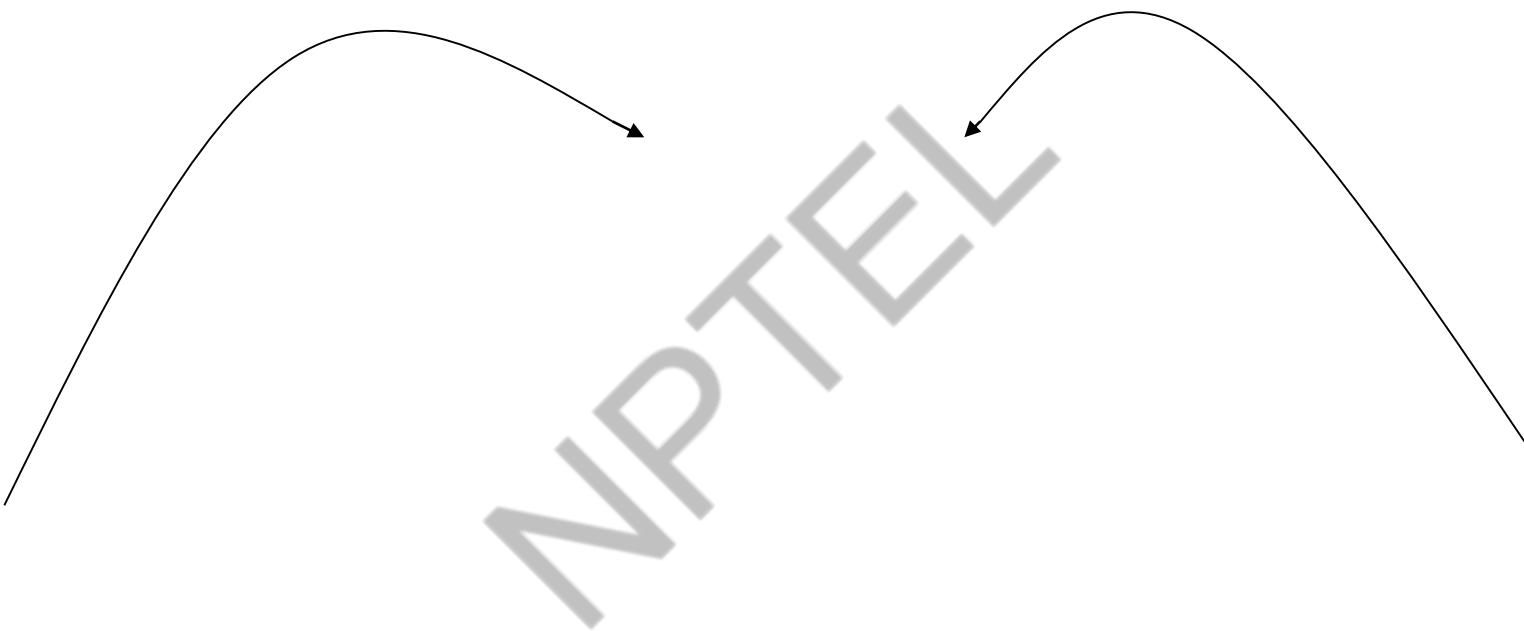


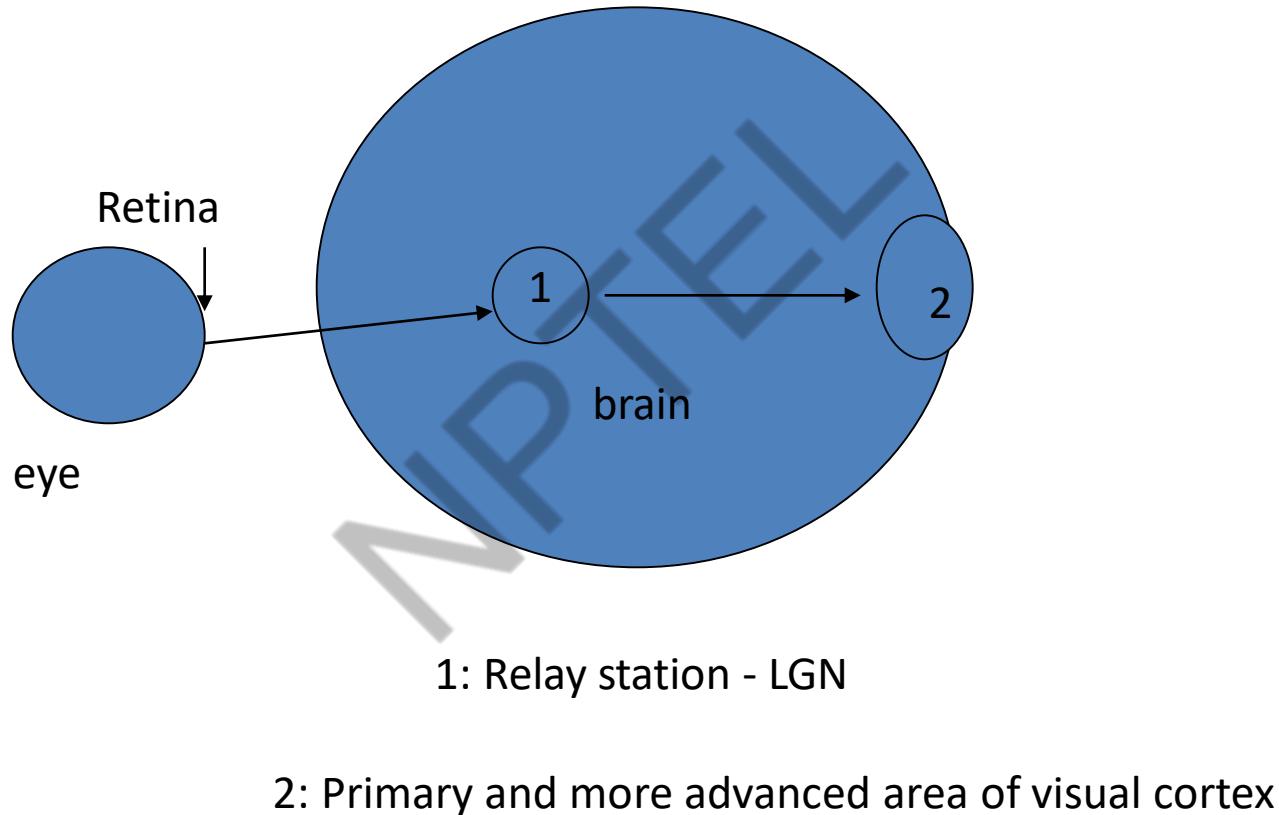
Image credit: Mark R. Homes @ National Geographic Society

- According to noted neuroscientist V. Ramachandran of University of California, San Diego, the brain can make guesses based on information available and some simple assumptions
- Pattern of shadows
- Light usually from top

Orientation



From the eye to the mind



- Rods: Monochrome and in low light
- Cones: colour vision

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Attention

- The perceptual process of selecting certain inputs for inclusion in our conscious experience or awareness at any given time

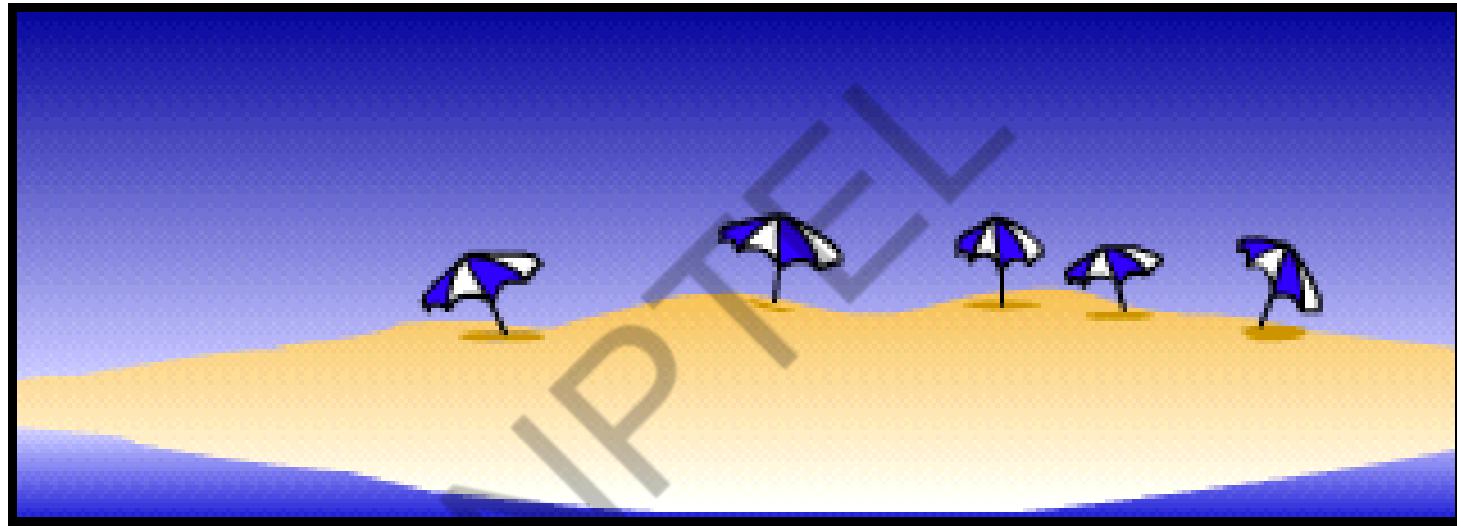


Image taken Flash Animation Software demo movie

Filtering

- Why does focus shift?
- We filter, partly blocking certain inputs

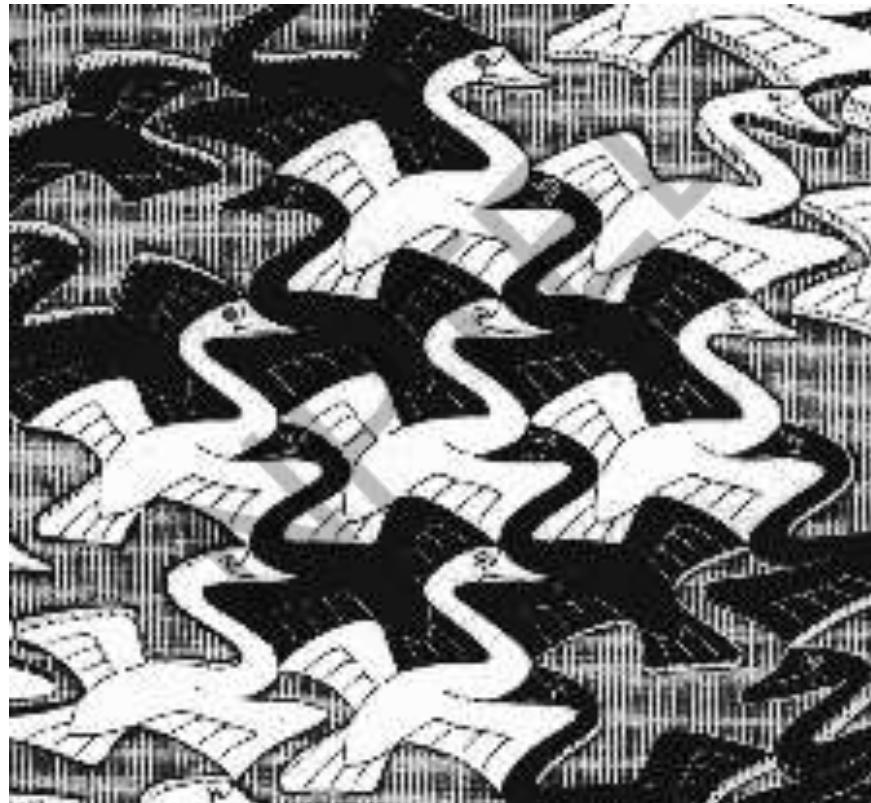
Limited Mental Capacity

Form Perception and Gestalt

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- Gestalt (German) used to indicate the form-forming capabilities of the mind (Whole form approach) and the belief that this holistic perception is innate to the mind

Figure-ground



M.C. Escher: Moebious with Birds

- The visual system uses an innate binary division – the figure we look at and the ground which is everything else and forms the background
- This relation is reversible
- But we cannot perceive the same thing as figure and ground at the same time – it requires a mental switching

Gestalt

- Max Wertheimer
- Kurt Koffka
- Wolfgang Kohler
- We are surrounded by sounds and forms that do not have a sole meaning. At any moment, our perception is what gives it form and meaning.

The vase and the two faces



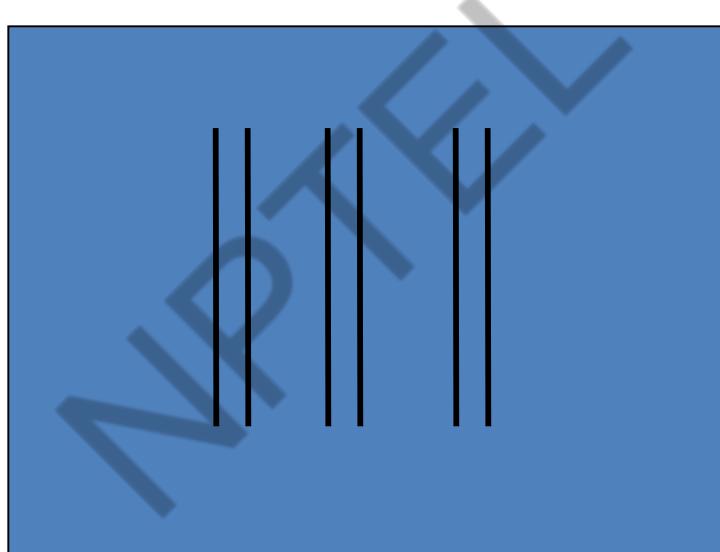
A demonstration of multi-stability: popping back and forth between two or more unstable perceptions

Subjective Contour/Reification

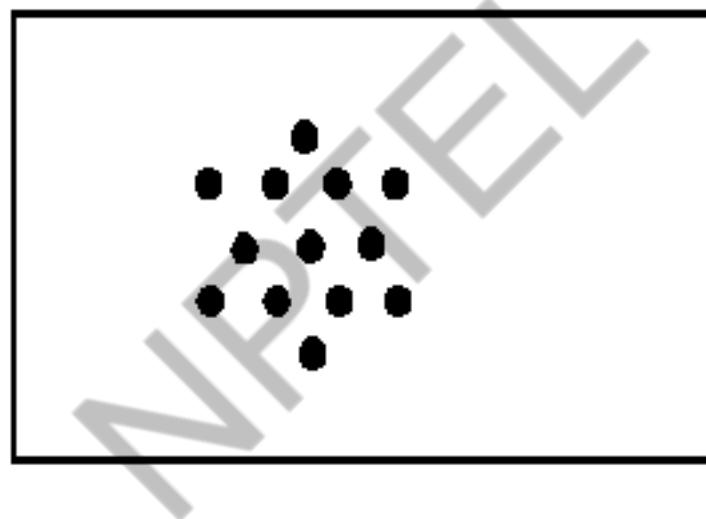


Image credit: Mark R. Homes @ National Geographic Society

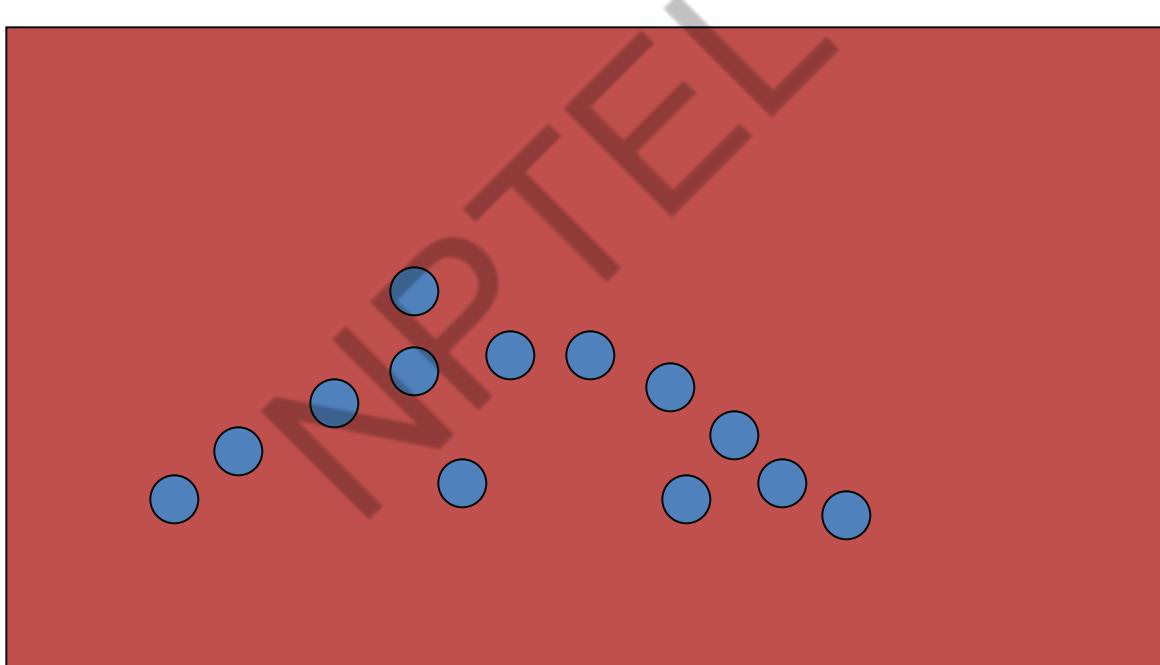
Proximity



The law of good figure

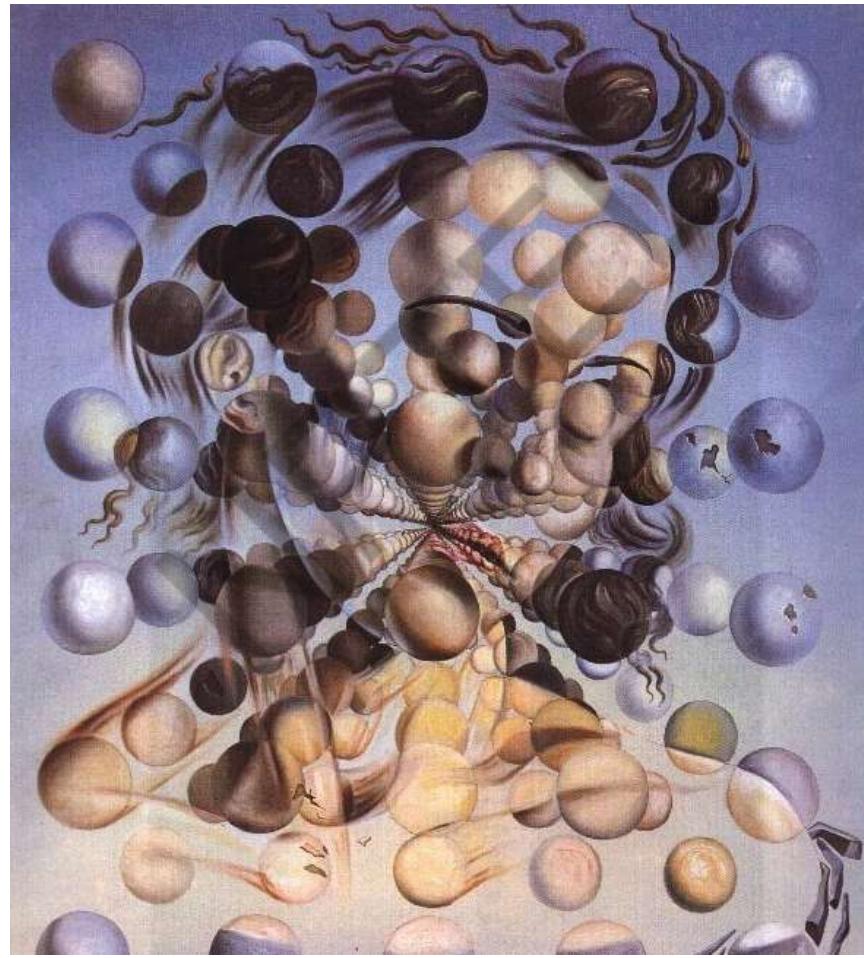


Continuity





Salvador Dalí: The Phantom Cart



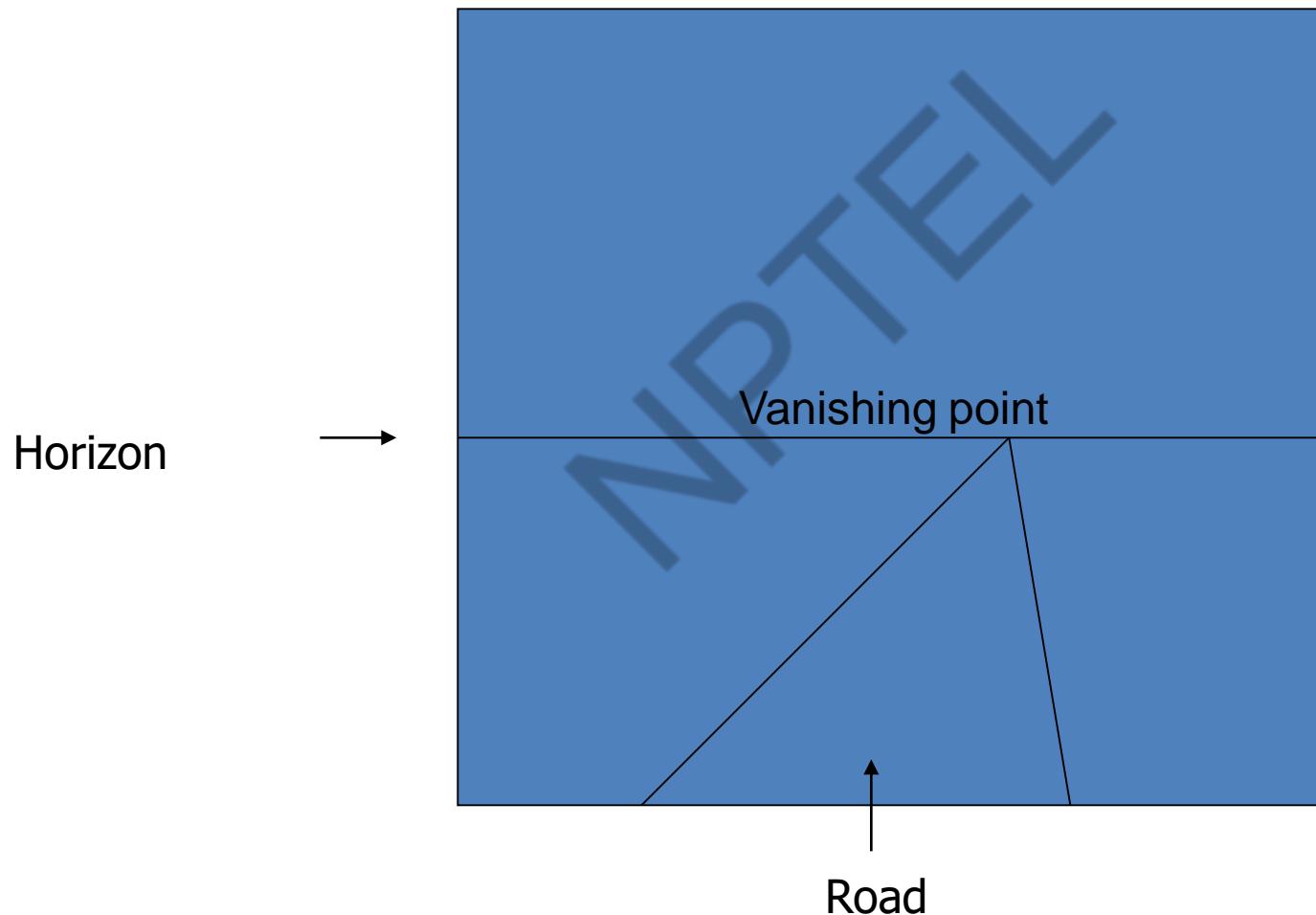
Salvador Dali: Galatea of Spheres

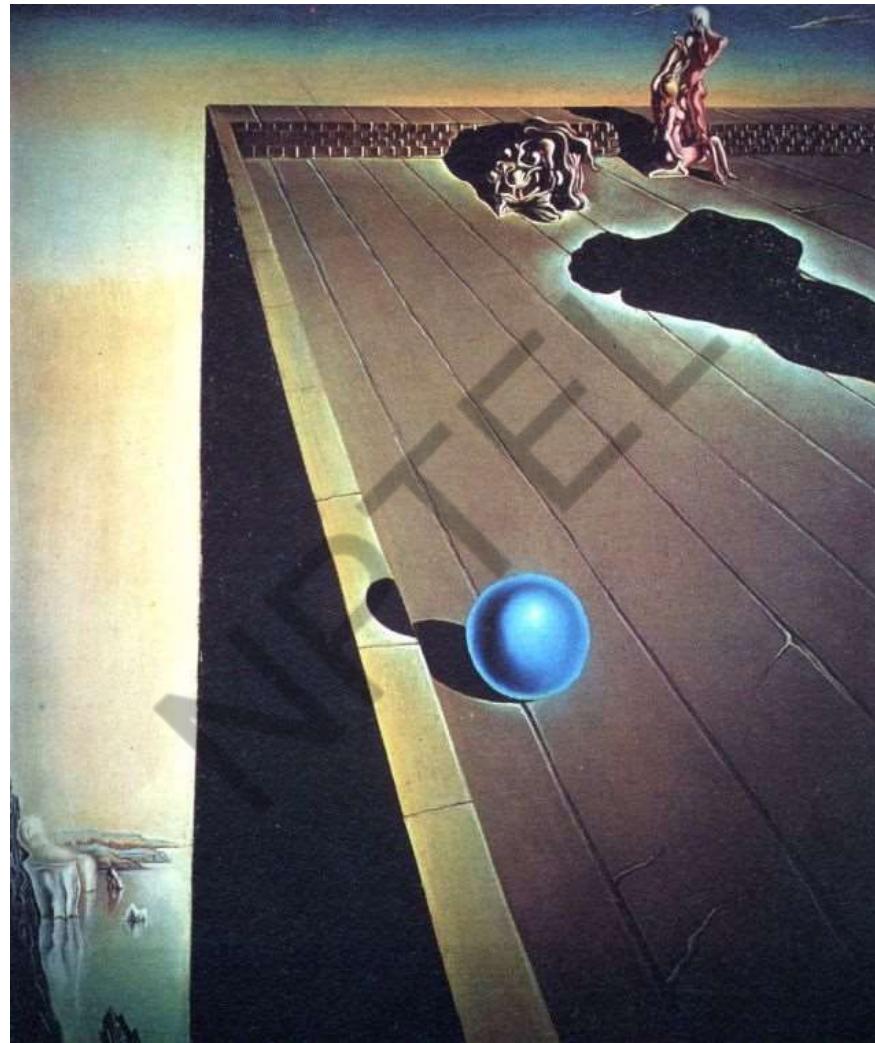
Depth Perception

NPTE



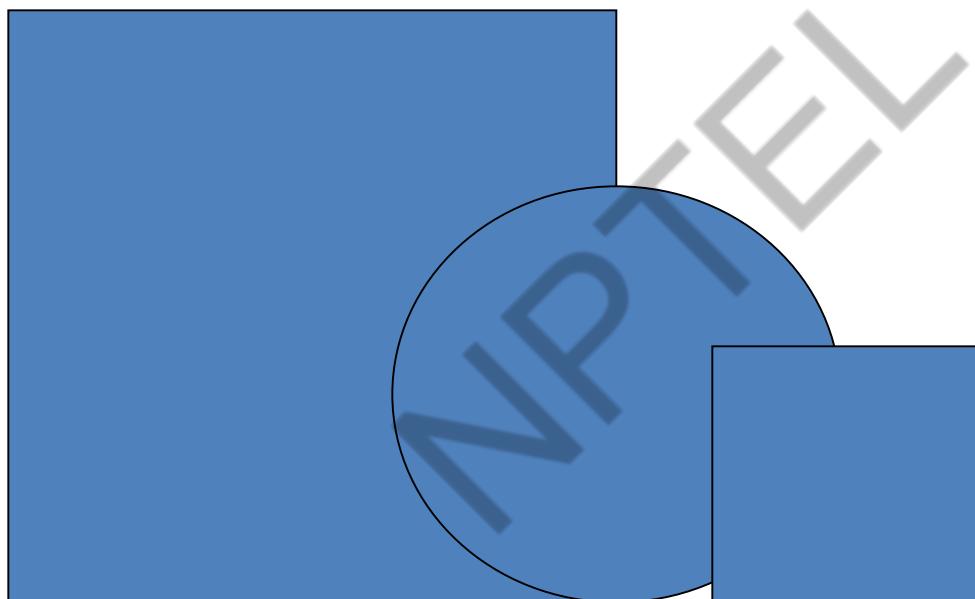
Linear perspective





Dali: Vertigo

Interposition



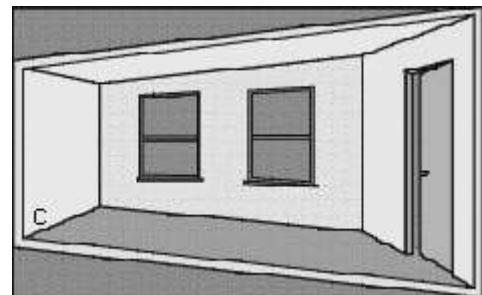
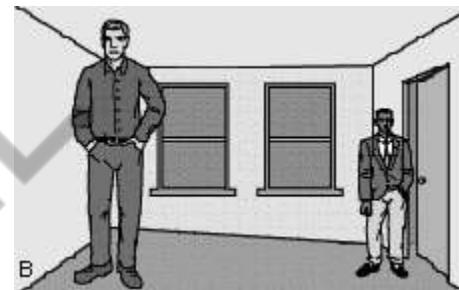
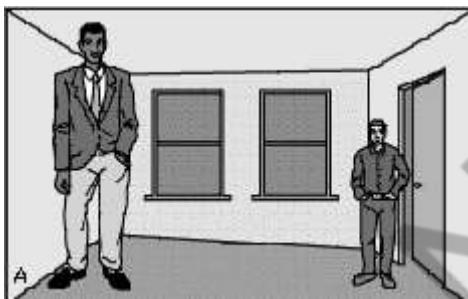
Relative Size

- The farther an object is from the eye, the smaller it looks
- The episode of the buffalos



Gustave Caillebotte: Paris

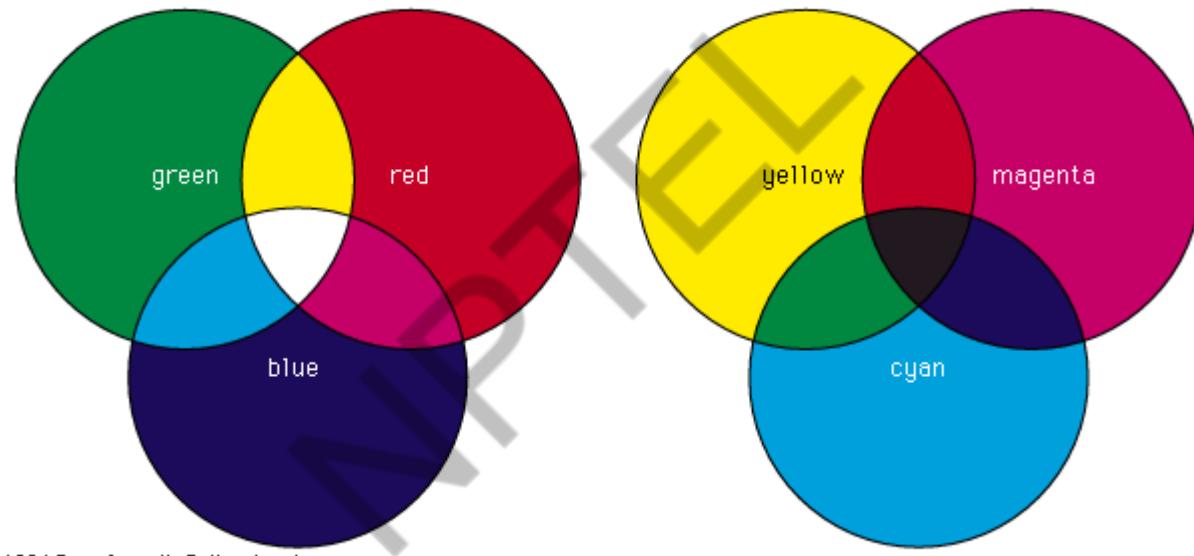
Perceptual assumption



Source: Encyclopedia Britannica Deluxe Edition 2007

Color Perception

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©1994 Encyclopaedia Britannica, Inc.

Source: Encyclopedia Britannica 2007 Deluxe Edition

Color wheel

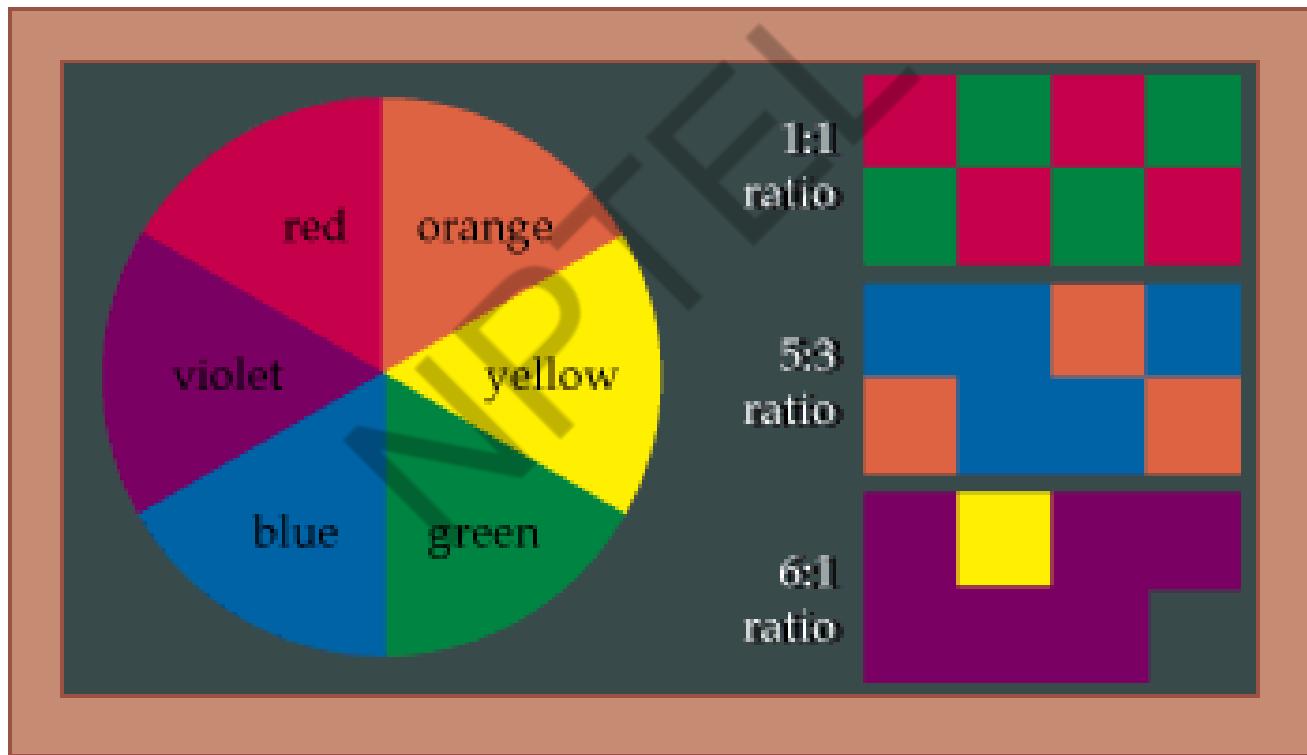
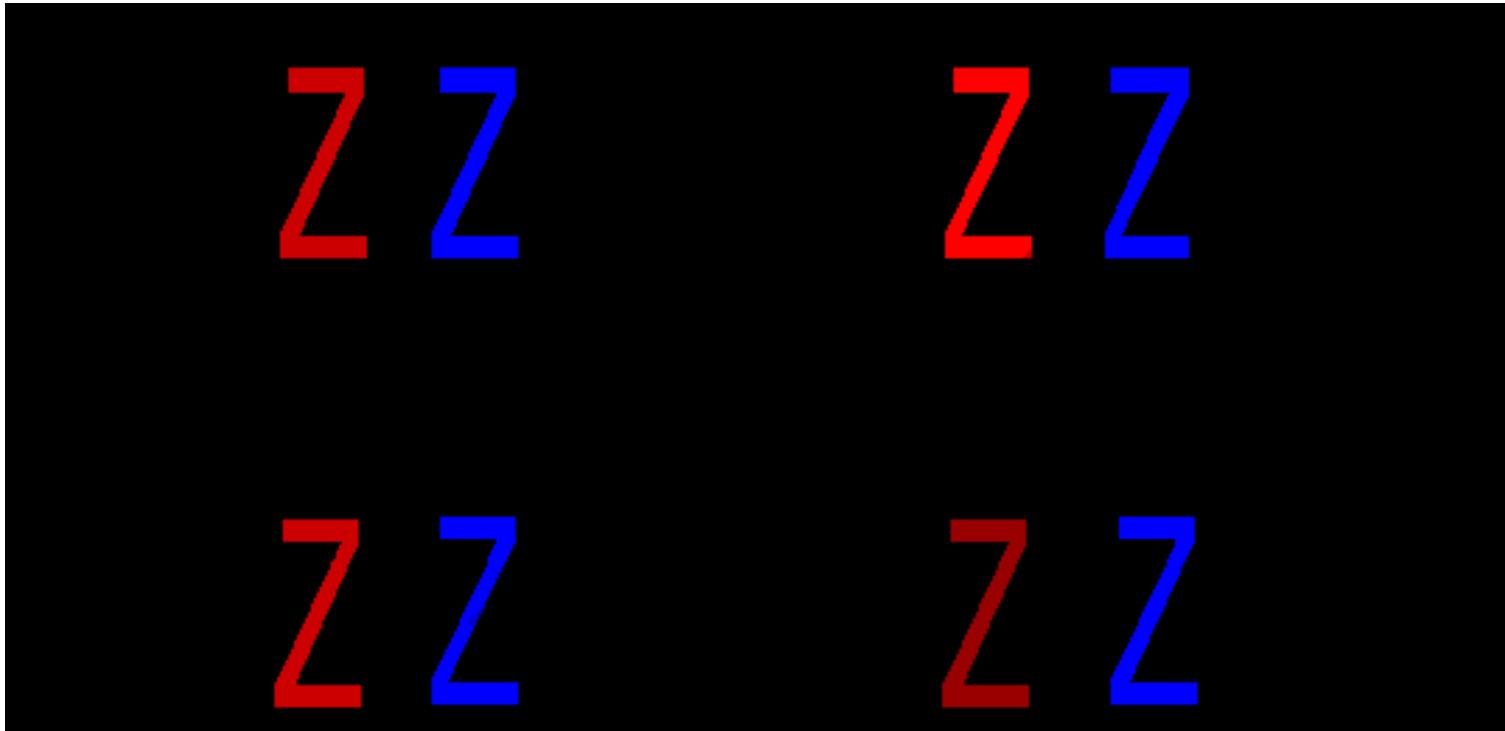


Image source: “The Joy of Perception”

Brightness, color and depth



Website of “The Joy of Perception”



Seurat: the Bathers



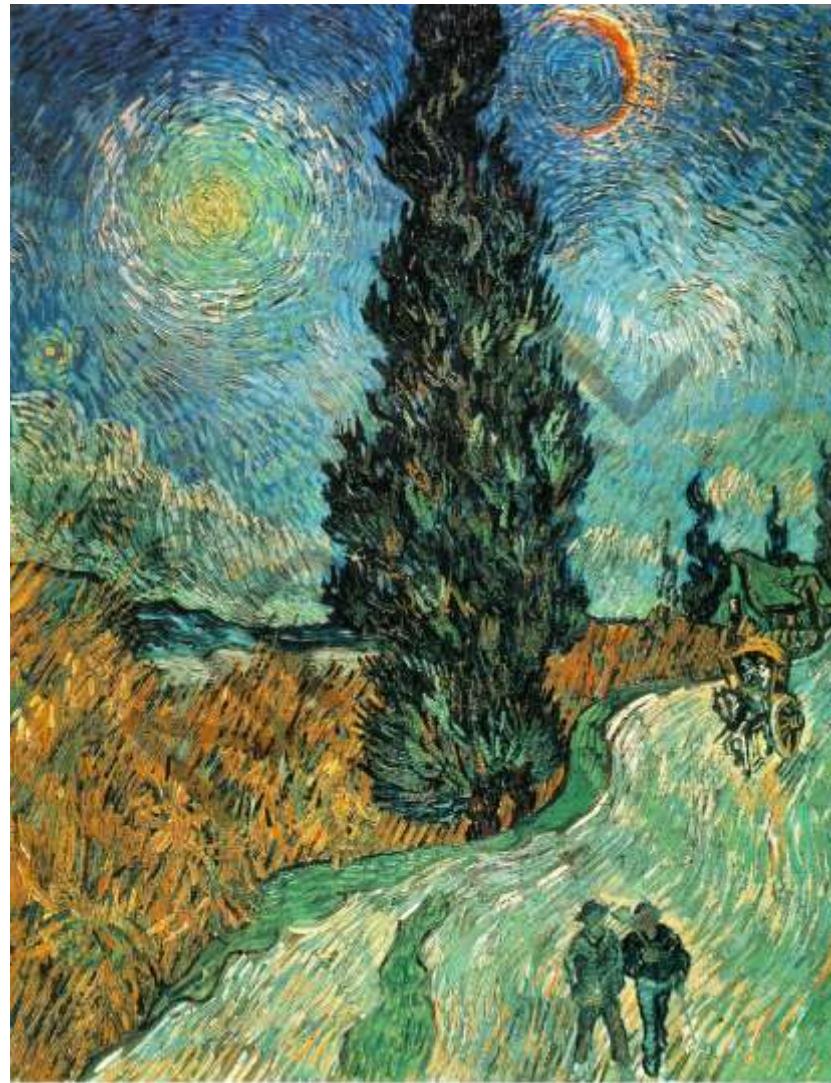
De Chirico: The Nostalgia of Infinite



Munch: The Scream



Francis Bacon: Crucifixion 3



Van Gogh: Cypress in Starry Night



Van Gogh: Wheatfield under threatening skies



Tibetan Buddhist *Thangka* painting: Wikipedia images

Color symbolism

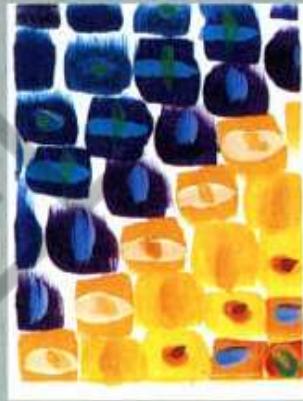
- Cultural differences
- Age difference
- Class difference
- Gender difference
- Trend or current fashion

Image source: *Colour*. Bettey Edwards,
Tarcher/Penguin, 2004

Fig. 12-4. R. Larson



Colors I Dislike.



Colors I Like.



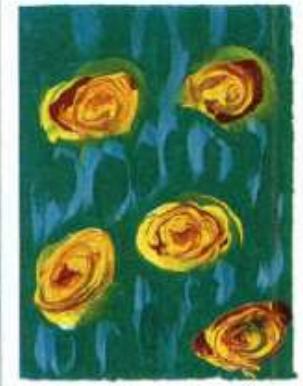
Summer.



Fall.



Winter.



Spring.

Image source: *Colour*. Bettey Edwards,
Tarcher/Penguin, 2004

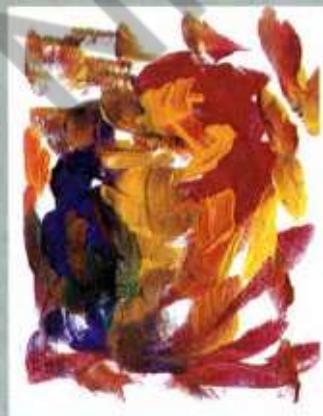
Fig. 12-5. Tim McMurray



Colors I Dislike.



Summer.



Fall.



Winter.



Spring.

Image source: *Colour*. Bettey Edwards,
Tarcher/Penguin, 2004



Fig. 12-10. Four students' expression of "Anger."

Image source: *Colour*. Bettey Edwards,
Tarcher/Penguin, 2004

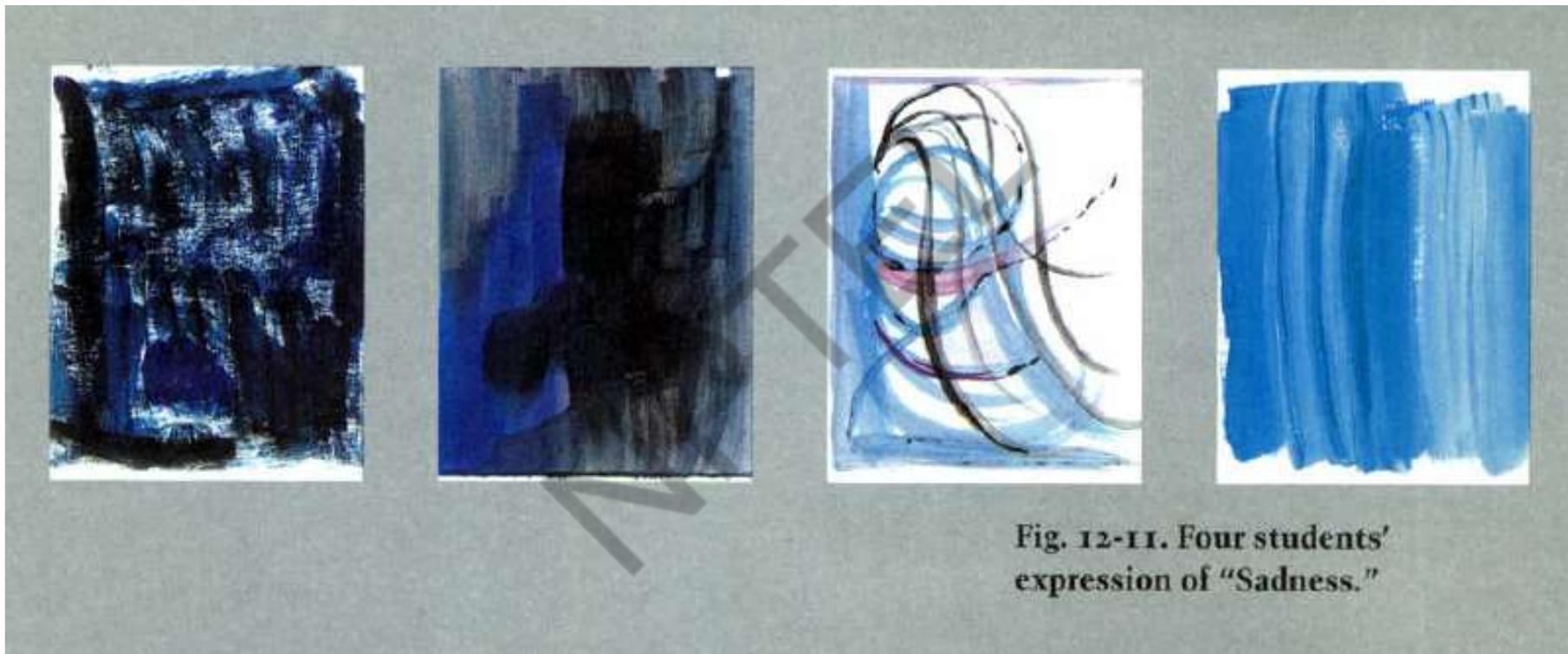
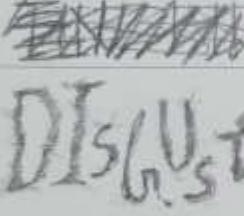
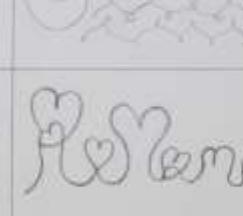


Fig. 12-11. Four students'
expression of "Sadness."

Our studies

	DISGUST	PEACE	ROMANCE	SADNESS
LINE				
TYPOGRAPHY				
COLOUR	 	 	 	 

Our studies



happiness



fear



sadness



peace



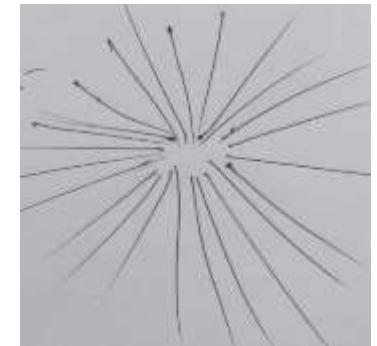
disgust



anger



romance



wonder

Colours, lines and typography for a range of emotions:

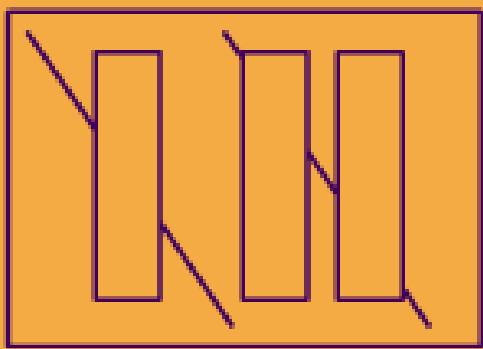
Samples of participants' drawings and paintings

Illusion

- There is an innate ambiguity in retinal input. For a given retinal image, there are infinite number of three dimensional images available for interpretation. Usually we get the interpretation right. When we don't, we have an illusion.
- Some illusions arise because there are more than one possible interpretations.
- An **illusion** is a distortion of the senses, revealing how the brain normally organizes and interprets sensory stimulation.

Types of

- **Ambiguous illusions** are pictures or objects that elicit a perceptual 'switch' between the alternative interpretations.
- **Distorting illusions** are characterized by distortions of size, length, or curvature.
- **Paradox illusions** are generated by objects that are paradoxical or impossible.
- **Fictional illusions (Hallucinations)** are defined as the perception of objects that are genuinely not there to all but a single observer, such as those induced by schizophrenia or a hallucinogen.



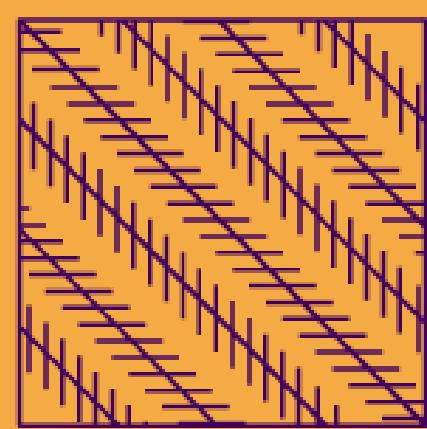
C Poggendorff

Lines covered by rectangles are straight.



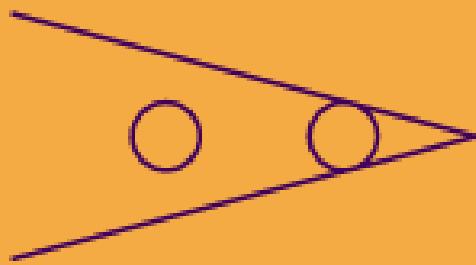
B Müller-Lyer

Lines are equal in length.



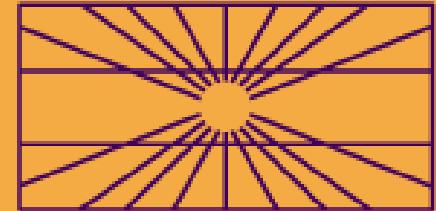
D Zöllner

All long lines are parallel.



E Ponzo

Circles are equal in size.



F Hering

Horizontal lines are parallel.



H Konig necklace

Tops of circles are on a straight line.

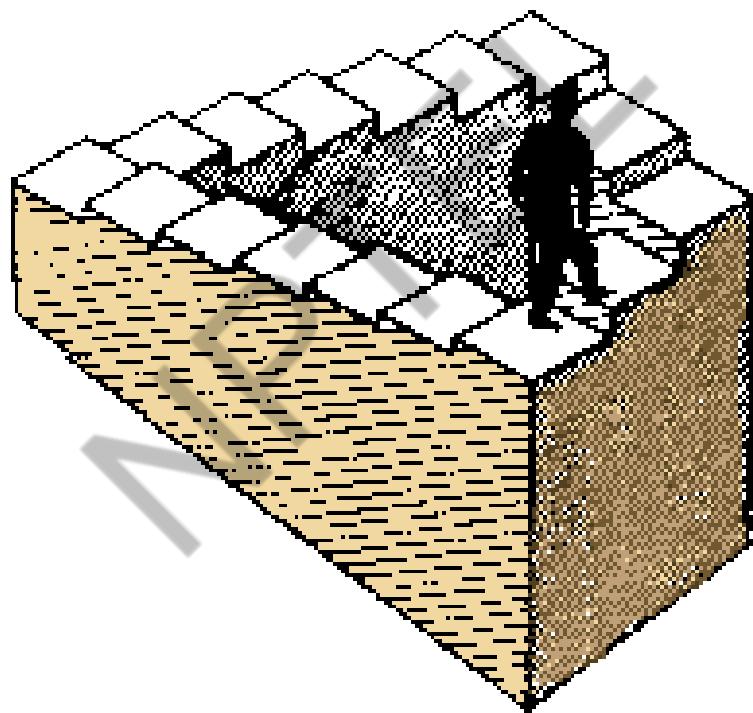


Image source: www.scientificpsychic.com

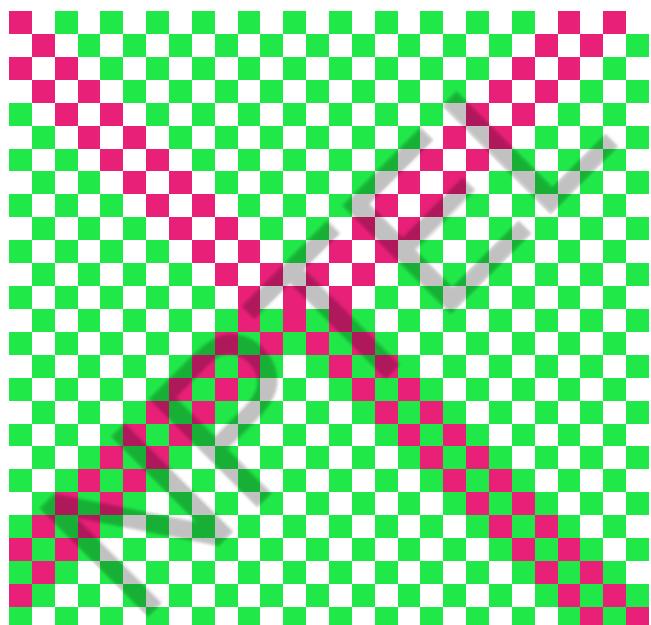
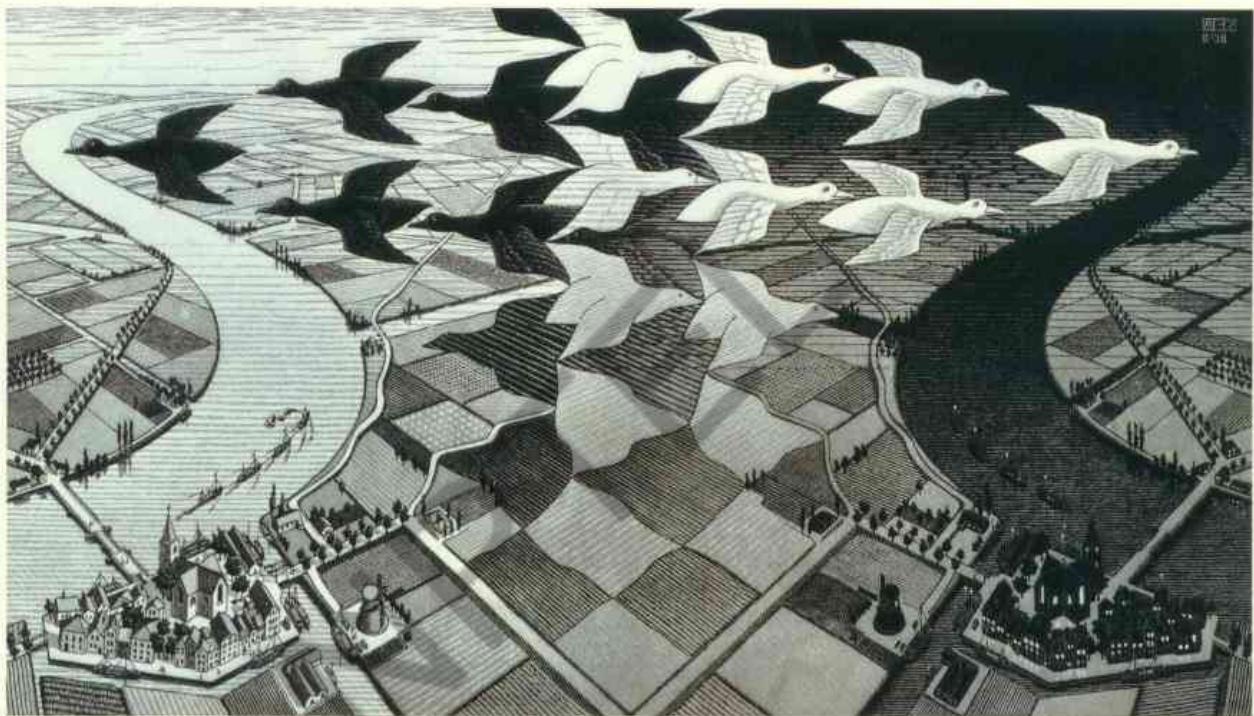


Image source: www.scientificpsychic.com



Escher: Day & night



Magritte: Call of the Peaks



Shigeo Fukuda
(1932-2009)

References and images

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<http://www.doorsofperception.com/doors>

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- *Colour*. Bettey Edwards, Tarcher/Penguin, 2004.

- Perception, Gestalt, Panopticon, etc (Wikipedia)

The aural: its relevance and impact



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Overview

- Auditory perception
- Music
- Its key elements
- Music perception
- The role of noise and music in our lives
- Music in multimedia
- Music in cognition, emotion and therapy
- Using music and sounds in social contexts
- References

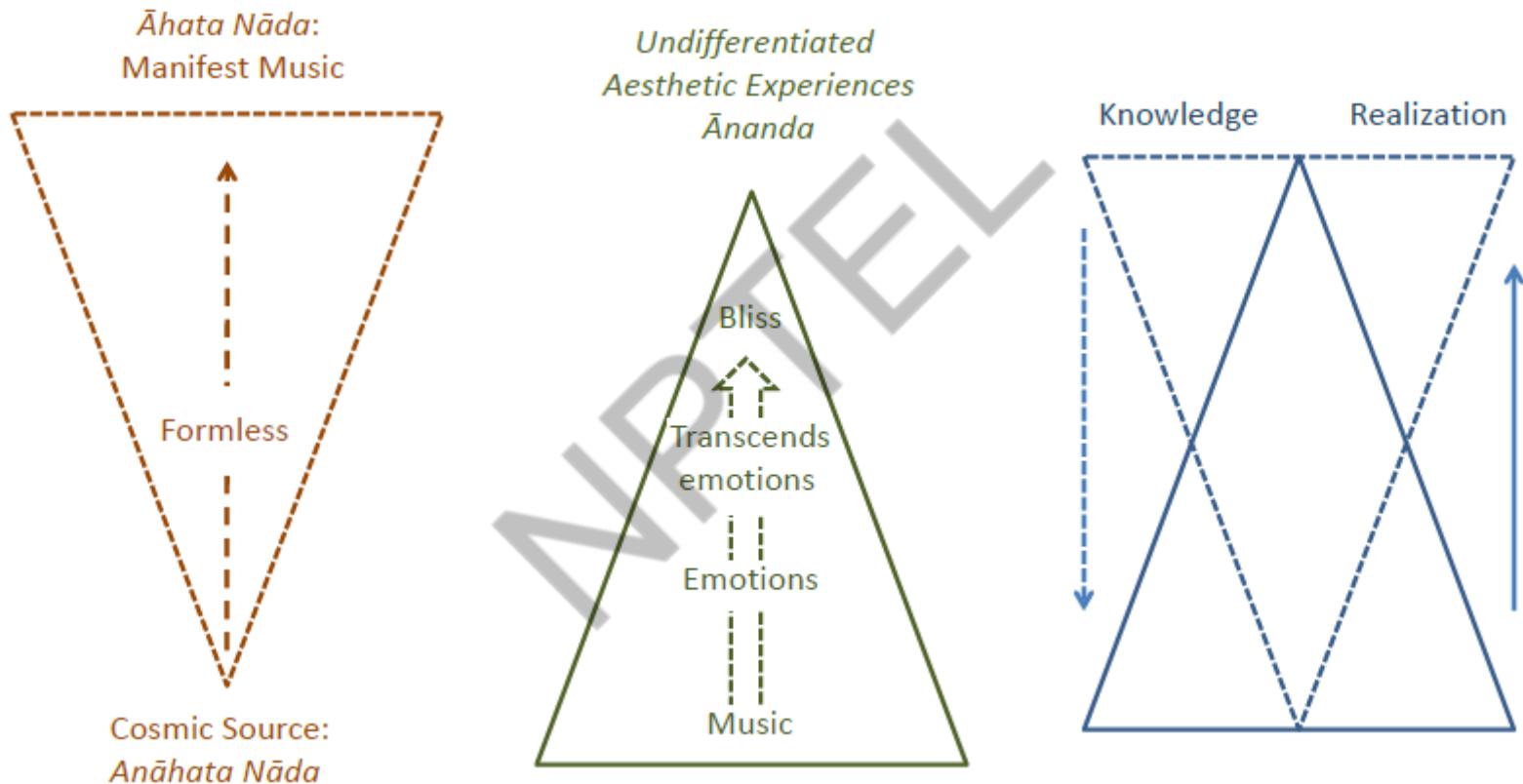
Auditory perception

- The ability to hear sounds by detecting vibrations
- Ear – nerve impulse – brain (primary auditory cortex in temporal brain)
- Sounds generally make us think of the sound source – we also differentiate sound on its temporality and features
- Provides information about space (diffused)-direction (origin)
- Sounds and colors (will discuss later)

Music

- Cultural activity
- Art form
- Sound and silence
- Music of the Sirens (*Odyssey*)
- Music (Viswamitra)
- Music – Oum – the source – nada – spirituality
- Conversation – drama – polyphony

Music and the Indian context



Pitch and melody

- Highness or lowness on notes – frequency
- A sequence of notes of different pitches
- Often mathematically or graphically represented as well
- Key ingredients of a song/ musical piece in combination with duration, pauses...

Harmony

- An aesthetic category – can be understood in the context of visuals as well
- Pitches played at the same time
- Give rise to chords
- Or played in sequence

Rhythm

- Also a visual component
- Arrangement of sound and silence in time
- A musical piece can have its rhythm
- It can also be accompanied by rhythm

Timbre

- The quality of sound of a voice or instrument
- Even if two instruments play the same note we are able to tell the difference
- Other vibrations at other frequencies (with matching periodicity with the main frequency)
- Other vibrations typical to the instrument

Music perception

- Culture and meaning
- Culture and emotions
- Context and emotions
 - Musical context (and sequence)
 - Multimedia context

Music in our lives

- Music listening for itself
- Music and enjoyment
- Music and relaxation
- Music in multimedia and presentations

Music and multimedia

- Ringtones and other information
- Interaction sounds
- Role in intensification or dramatization
- Example of text animation...and music
- *The Sky*: Heebok Lee, Time Motion & Communication, Carnegie Mellon University, 2000)
- From “Renaissance,” Edna Saint Vincent Milley

But, sure, the sky is big, I said;
Miles and miles above my head;
So here upon my back I'll lie
And look my fill into the sky.
And so I looked, and, after all,
The sky was not so very tall.
The sky, I said, must somewhere stop,
And—sure enough!—I see the top!
The sky, I thought, is not so grand;
I 'most could touch it with my hand!
And reaching up my hand to try,
I screamed to feel it touch the sky.

I screamed, and—lo!—Infinity
Came down and settled over me;
Forced back my scream into my chest,
Bent back my arm upon my breast,
And, pressing of the Undefined
The definition on my mind...

Music, emotion and therapy

Structural Feature	Definition	Associated Emotions
Tempo	The speed or pace of a musical piece	Fast tempo:happiness, excitement, anger. Slow tempo: sadness, serenity.
Mode	The type of scale	Major tonality: happiness, joy, Minor tonality: sadness.
Loudness	The physical strength and amplitude of a sound	Intensity, power, or anger
Melody	The linear succession of musical tones that the listener perceives as a single entity	Complementing harmonies: happiness, relaxation, serenity. Clashing harmonies: excitement, anger, unpleasantness.
Rhythm	The regularly recurring pattern or beat of a song	Smooth/consistent rhythm: happiness, peace. Rough/irregular rhythm: amusement, uneasiness. Varied rhythm: joy.

Our key findings

- Indian Music distinctively conveys emotions
- These emotions are dominantly calm, or sad
- The music that follows the next music manages to modify how we perceive it
- Music is linked to colors and forms in terms of emotions
- The same music, slow vs. fast convey different emotions and meaning...

Clips

- Different instruments
- Sad
- Happy
- Slow
- Fast

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Images



Wonder (Positive Variance,
High Arousal)



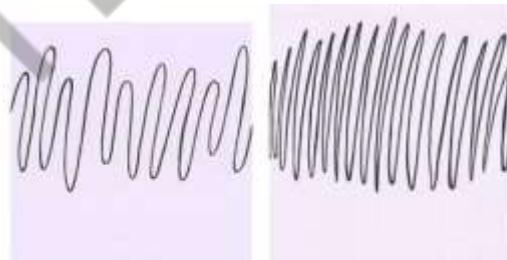
Peace (Positive Variance, Low
Arousal)



Romantic



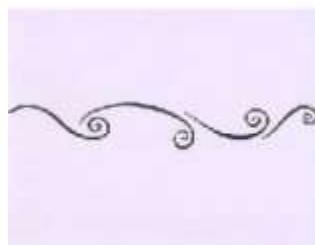
Sad



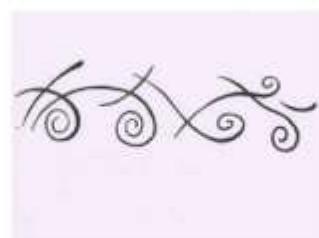
Tempo 3

Tempo 5

Tempo 6



Simplicity Complexity 1



Simplicity Complexity 2



Simplicity Complexity 3

Relevance

- Ambience – sales increase in store
- Context – different music, different meanings
- Meaning – intrinsic meaning, ability to create meaning
- Impact – to total effect

References

- Music and emotions. Wikipedia
- Auditory perception. Stanford encyclopedia of philosophy
- Music psychology. Wikipedia
- *Sandhi MHRD Project on Music: PIs: Pallab Dasgupta and Priyadarshi Patnaik (at IIT Kharagpur)*

The body and the way it communicates



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Overview

- Introduction
- Gestures
- Space and territory
- Analysis
- References

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Communication %

- One study found that the various components contribute the following percentage to communication:
- Message 7%
- Vocal (tone of voice, etc) 38%
- Nonverbal 55%

- Professor Birdwhistle found:
- In a day the average person actually speaks words for a total of about ten or eleven minutes.
- In face to face communication, verbal component is around 35% and nonverbal component is around 65%.

Criticism

- Overgeneralization
- Context specificity
- Culture, learning and behaviour

Cultural or Inborn?

- Body language
 - What about smiles
 - What about expression of agony or anger?
 - Are they the same in all cultures?
- Understanding body language
 - Some are better than others
 - All must use nonverbal cues, intuitively or consciously

Some basics and their origin

- Nodding the head: yes and no
 - Cultural or natural?
 - What about babies?

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- Sneer
 - Baring teeth was used as a form of or as a threat of attack. What does it mean today?
- Shrug
 - Universal?
 - Exposed palms, hunched shoulders and raised eyebrows.

- OK
 - Popularized in the US in the 19th century
 - All correct / Old Kinderhook
 - Hand ring stand for the O?
 - In France it means zero
 - In Japan it can mean money

- Thumbs up
 - A lift?
 - All ok?
 - Vulgar?
 - Superiority?

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- V
 - Churchill popularized it: victory
 - What does it mean if the palm faces inwards?
 - What does it mean when the palm faces out?

Gesture Clusters

- Solitary gestures in isolation may be misleading.
- Context
- Cluster
- Totality of verbal and non-verbal codes
- Ambiguous means of communication

Power

- The higher one up the social ladder the lesser and more controlled the gestures?
- More use of words than gestures to communicate one's wills?
- If so, why?

Territories and Zones

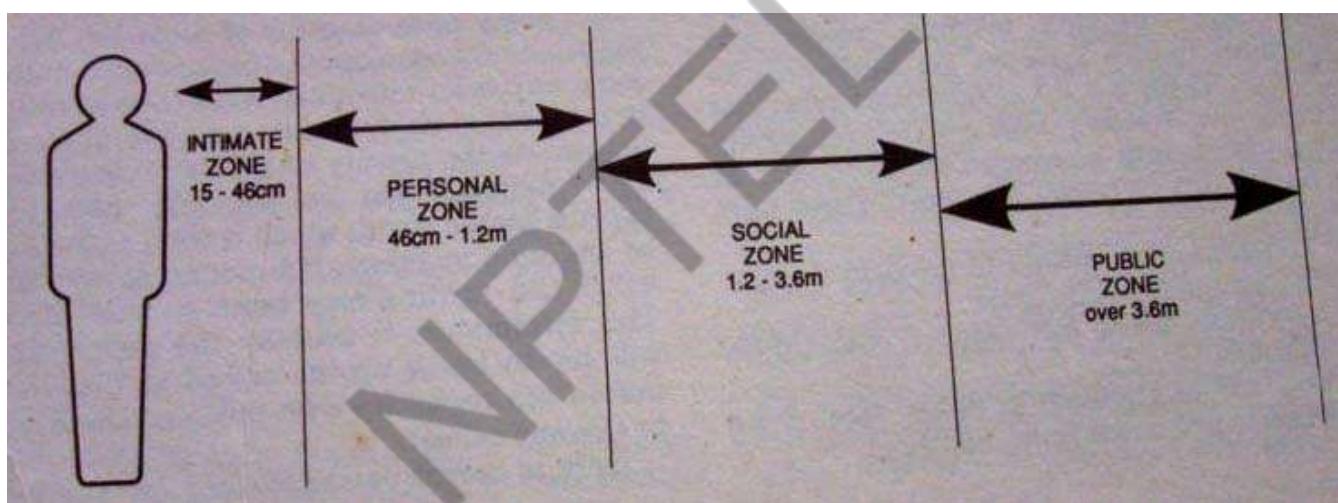


Image source: *Body Language*. Allan Pease

Space Rituals

- On what basis does one choose space
 - Cinema hall?
 - In a public space?
 - What's the purpose?

Culture and Zone

- What's the distance between two males in the Indian context?
- Is it the same in the US?
- Country vs city spatial zones

Handshakes

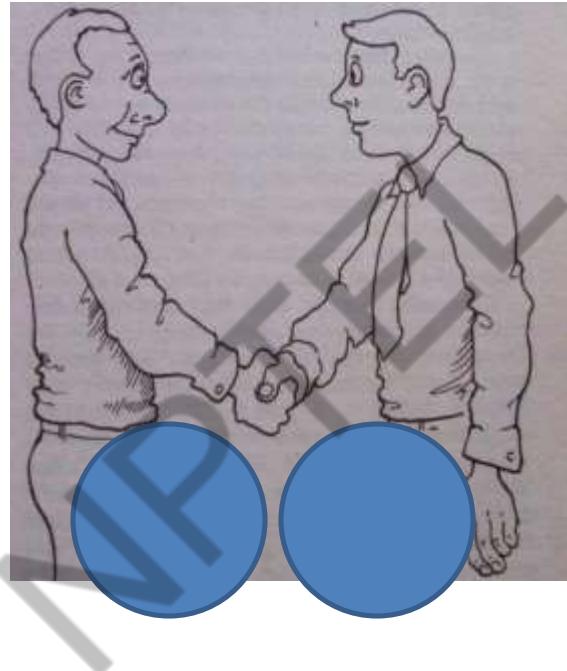


Image source: ***Body Language***. Allan Pease

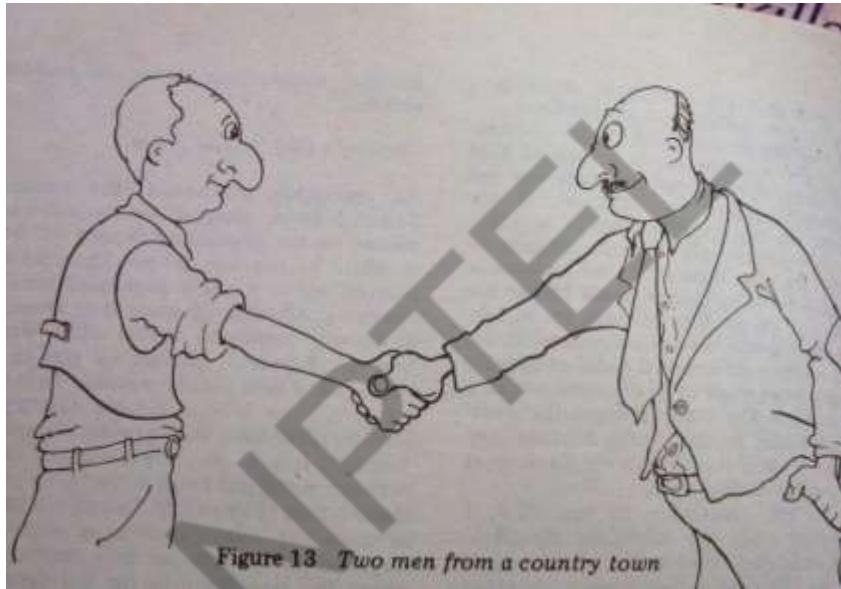


Image source: ***Body Language***. Allan Pease

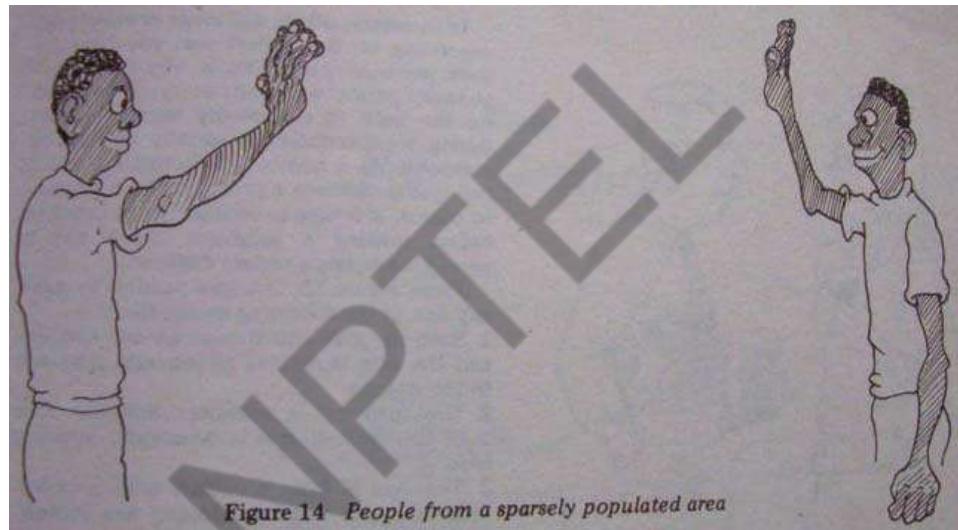


Figure 14 *People from a sparsely populated area*

Image source: ***Body Language***. Allan Pease

Space, driving and power

- Think about it:
- Does your behaviour change when you drive a car?
- Illustration



Picasso: The Blind Singer

Highlights

- Facial expression
- Gazing behavior
- Gestures
- Postures
- Head position
- Context and ambience



Tom Sawyer, 1936: Norman Rockwell



Sheep in a red dress, 1936: Norman Rockwell

Slide 1

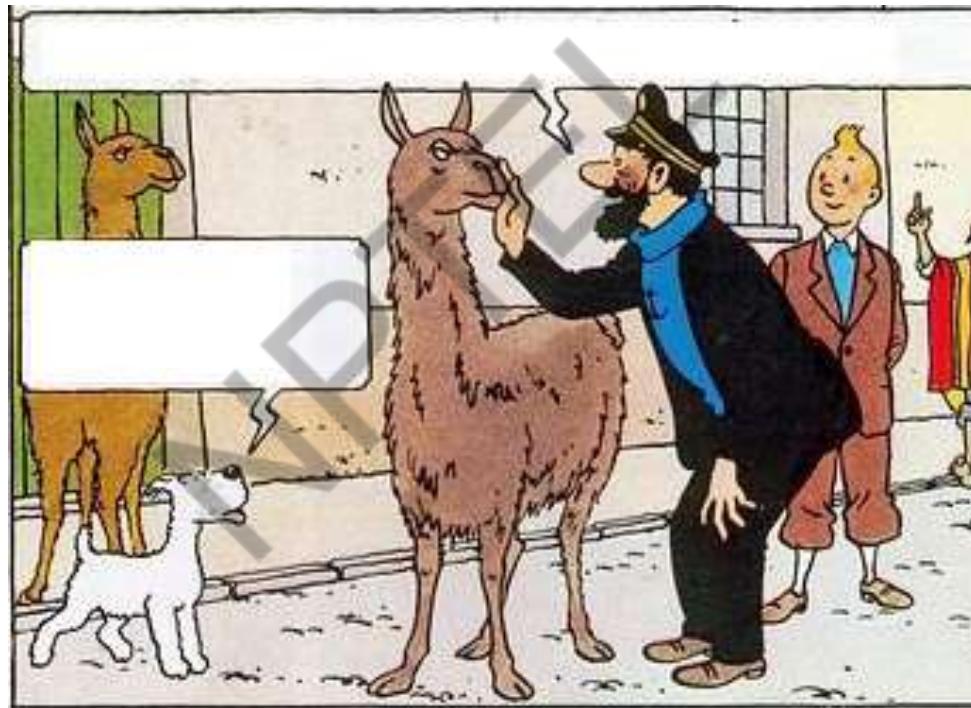


Image source – slides 1-7: *Tintin in Tibet*. Herge.

Observations

- Note the following for each slide that follows:
 1. Arm
 2. Legs
 3. Fingers
 4. Face
 - a. Eyes
 - b. brows
 - c. Lips
 - d. mouth
 4. Overall position of head and tilt of face in relation to the body

Slide 2



Slide 3



Slide 4



Slide 7



References

- Allan Pease, *Body Language: How to Read Others' Thoughts by their Gestures*, Sheldon Press, London, 1981.
- Ekman, P., Friesen, W. and Ellsworth, P., *Emotion in the Human Face*, Pergamon Press, New York, 1972
- Ekman, P., and Friesen, W., *Unmasking the Face*, Prentice-Hall, London, 1975
- Fast, J., *Body Language*, Pan Books, London and Sydney, 1970.

The face, its expressions and what it says



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Overview

- Introduction
- Basic emotions
- Test
- References

NPTEL

The Human Face

- The face is a rich source of information about emotions and feelings. Other than our speech, face is the most important communicating medium that we learn to control and use in diverse social contexts. However, most people are poor readers of the face; and most people learn to disguise facial expressions in social contexts.

Points to remember

- Emotions can be masked, disguised or enacted.
- However, it is possible to differentiate, with training (especially with video recordings), between true and false expressions.
- Ekman's FACS (Facial action coding system) tells us that genuine emotions involve both voluntary and involuntary muscles while false emotions use only voluntary muscles of the face. Using this knowledge one can identify true from false emotions.
- *Micro-expressions*: These are real expressions which come up only for a small fraction of a second before being masked.

- *Squelched expressions*: Expressions which are suppressed before they can appear fully.
- Research findings suggest that across cultures, basic facial expressions are similar. But, different ways of masking expressions and showing facial expressions in society are learnt.

Another important finding is that genuine facial expressions are more symmetrical (across left and right side of the face) than false expressions.

Facial expression of basic emotions

- Happiness
- Sadness
- Anger
- Fear
- Wonder
- Disgust
- Scorn

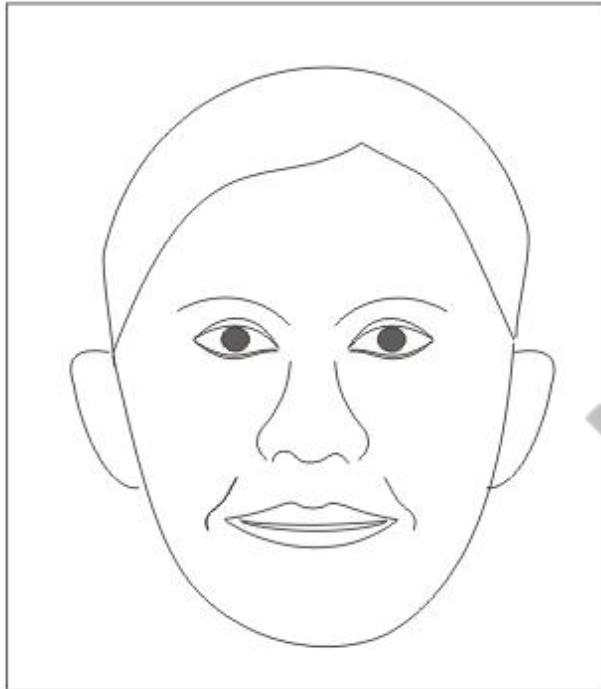
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Deceit

- Masking
- Substitution
- Micro-expressions

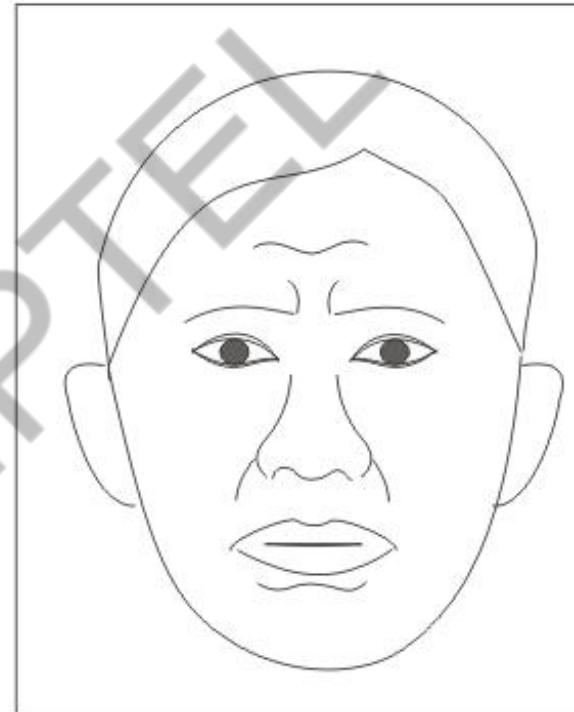
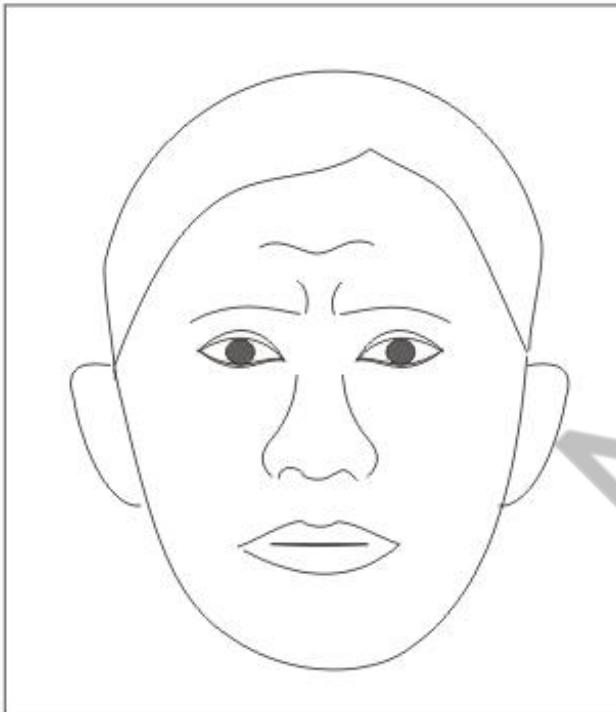
NPTEL

Happiness



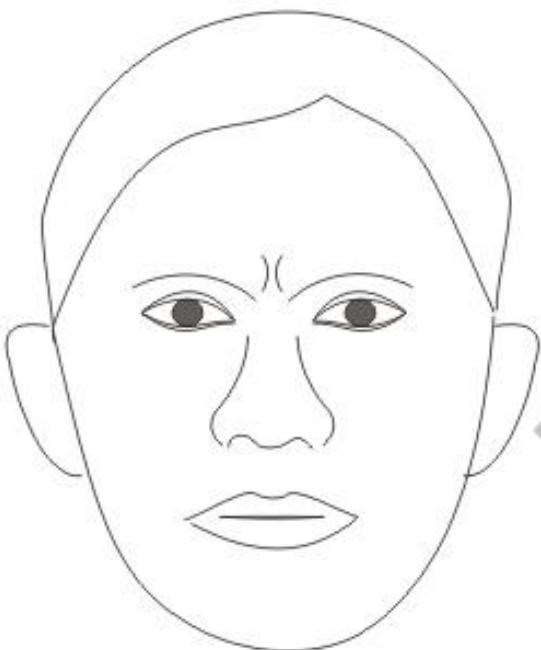
The two faces are almost identical. But in the second image the skin is bunched up under the lower eyelids and hints of crow's feet appear at the outer corner of the eyes indicating a genuine smile.

Sadness



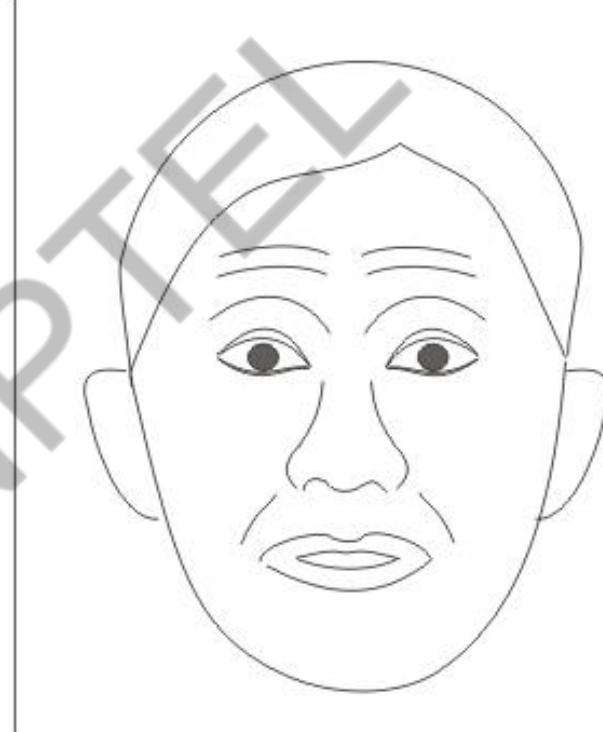
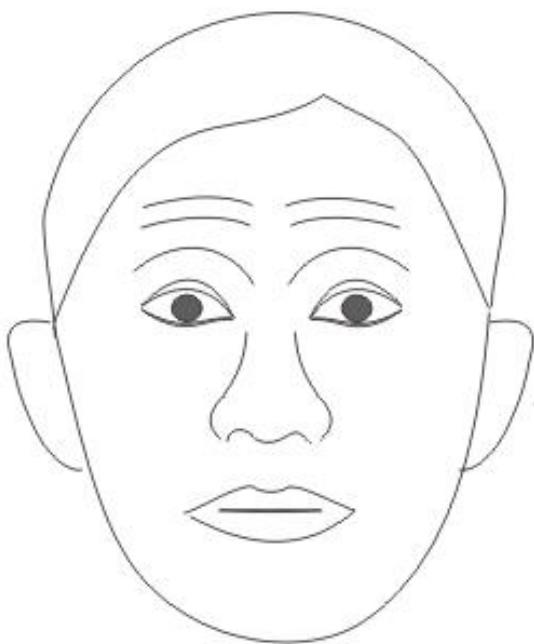
The two images show different degrees of worry. The image on the right shows greater intensity of emotion reflected in the lower face.

Anger



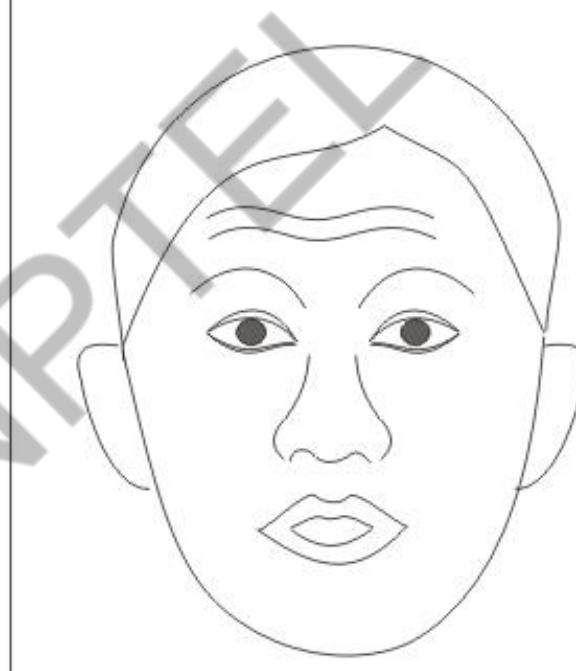
Anger (even surpassed anger) gets reflected in the eyes. The lower face shows overt and more intense anger.

Fear



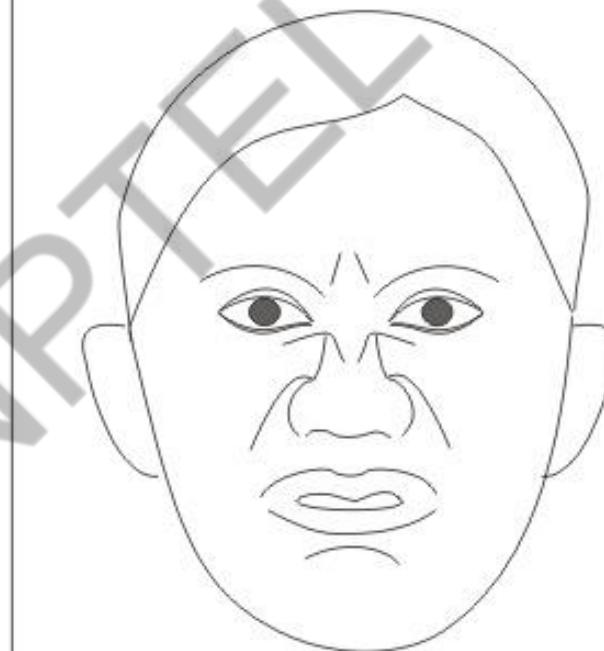
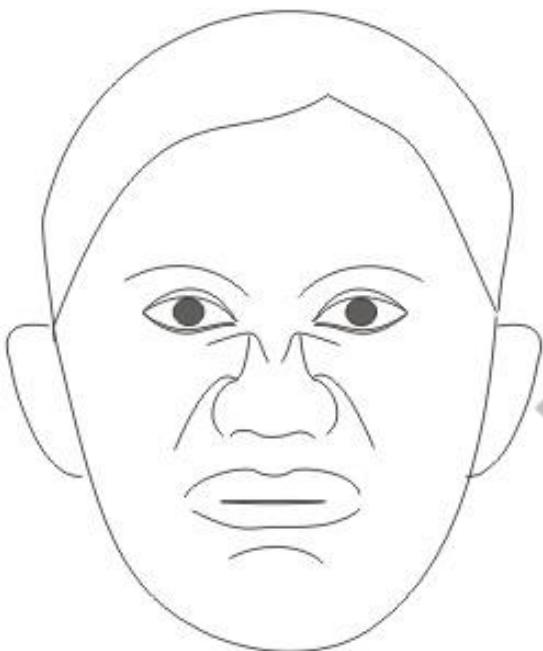
Fear also has raised eyebrows. But they are different from surprise eyebrows. Widened eyes and stretched lips indicate fear.

Surprise



Raised eyebrows and continuous forehead lines are key to the expression of surprise. Open mouth expresses greater intensity. Surprise is an emotion that appears more briefly than other emotions.

Disgust



Disgust gets expressed mostly in the lower face. Greater intensity involves the upper face as well

Test



All the images are from: “The Indian Spontaneous Expression Database for Emotion Recognition,” by S L Happy, Priyadarshi Patnaik, Aurobinda Routray, Rajlakshmi Guha *IEEE Transactions of Affective Computing*, (2015)

- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



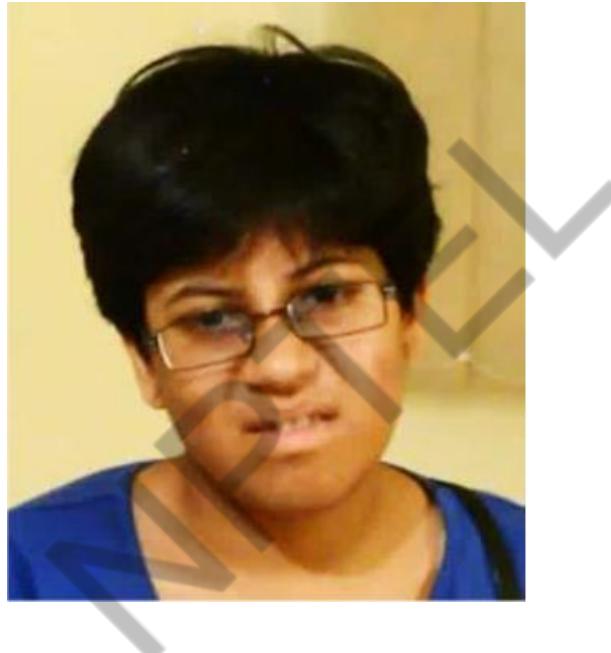
- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these

Posed expressions

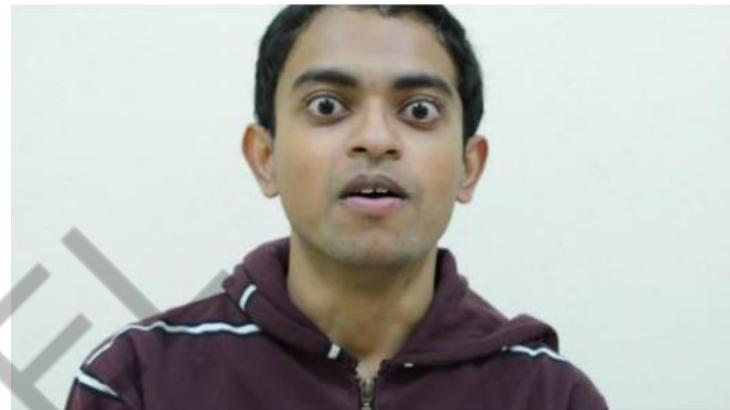


(b)

- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these

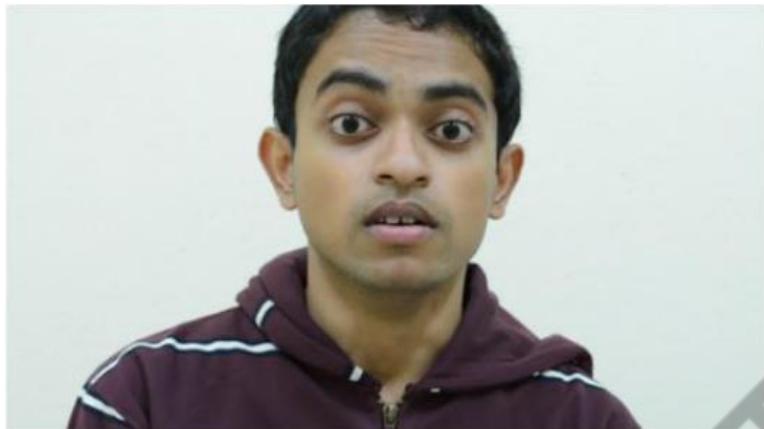


(c)

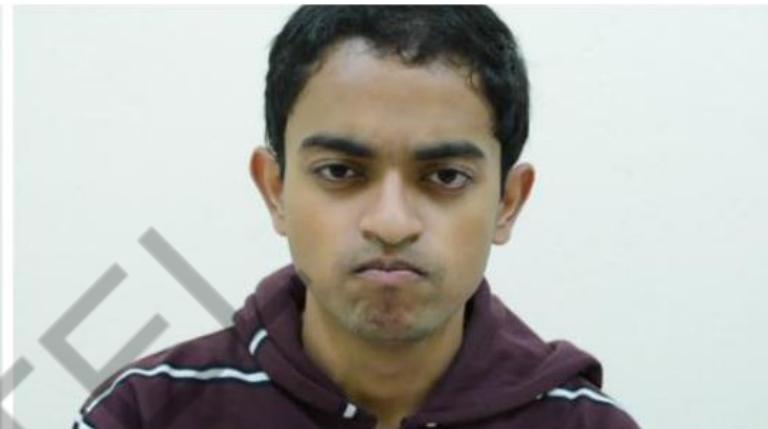


(d)

- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these



(e)



(f)

- Anger
- Fear
- Sadness
- Happiness
- Disgust
- Surprise
- Amusement
- Contempt
- None of these

References

- Allan Pease, *Body Language: How to Read Others' Thoughts by their Gestures*, Sheldon Press, London, 1981.
- Ekman, P., Friesen, W. and Ellsworth, P., *Emotion in the Human Face*, Pergamon Press, New York, 1972
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