

2 categories of visual theories

Sensual / Sensory

Theories

- Gestalt theory
- Constructivism theory
- Ecological theory

Perceptual Theories

- Semiotic theory
- Cognitive theory

Gestalt theory

- Given by Max Wertheimer in 1910 who was one of the 3 founders of Gestalt psychology.
- He propounded that perception is a result of a combination of sensations and not of individual sensory elements.
- He stated "The whole is different from the sum of its parts." (how things are much better than when putter together then as individual pieces)

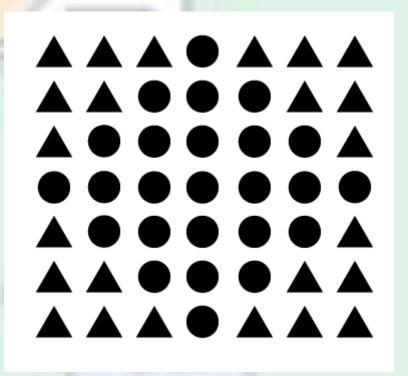
- Theory suggests that humans have a subconscious tendency to combine diverse bit of information into organised wholes.
- Gestalt refers to observable fact that things are seen as relating to each other and not as discrete elements.
- In process of viewing, viewers do not devote time and energy to individual bits of information, instead they look at the whole element.

7 principles of Gestalt theory

- Similarity
- Proximity
- Continuation
- Closure
- Figure-ground
- Symmetry
- Isomorphism

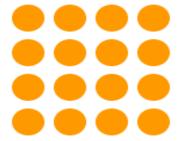
1.Similarity

- The principle of similarity states that when things appear to be similar to each other, we group them together. And we also tend to think they have the same function.
- For instance, in this image, there appear to be two separate and distinct groups based on shape: the circles and the squares.

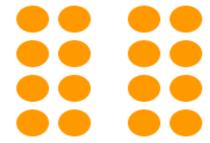


2. Proximity

This is perceived to be one group and the components somehow related to each other.

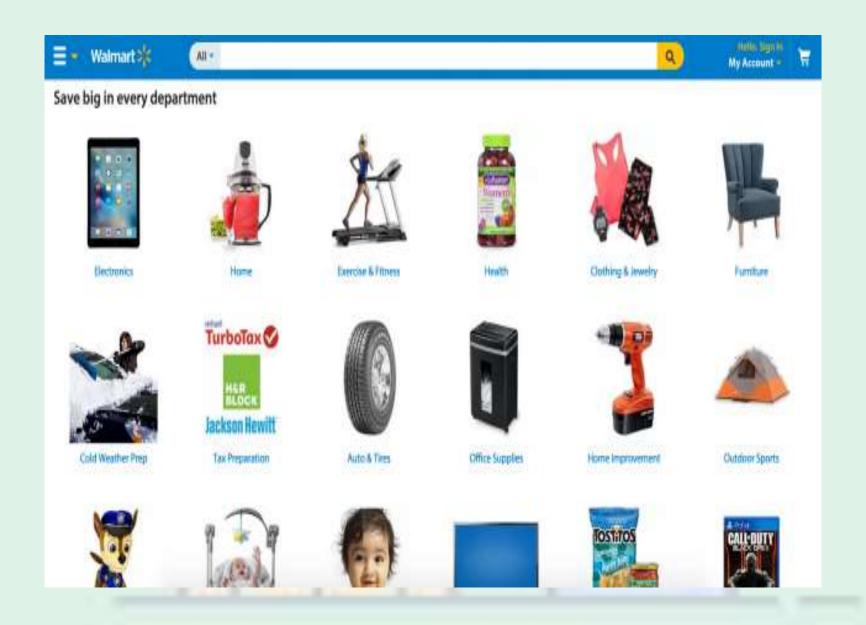


We perceive two groups here, and understand that there are differences between them.



The principle of proximity states that things that are close together appear to be more related than things that are spaced farther apart.

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3. Continuation

- It is based on the idea that viewers tend to close up spaces between the objects and perceive them as continuous of forming lines.
- The adidas logo has 3 horizontal white space running through it but the black treefoil or three leaf are seen as continued image because viewers group the leaves rather than attend to the spaced between them they tend to perceive a continuous mage.



4. Closure

- The principle of closure states that when we look at a complex arrangement of visual elements, we tend to look for a single, recognizable pattern.
- In other words, when you see an image that has missing parts, your brain will fill in the blanks and make a complete image so you can still recognize the pattern.

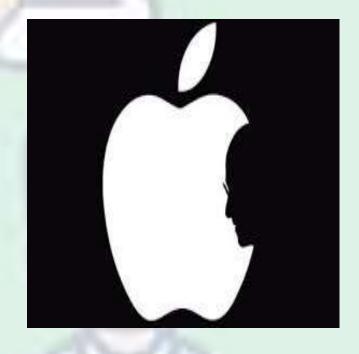




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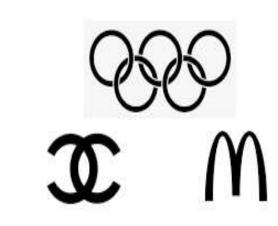
5. Figure ground

• The figure-ground principle states that people instinctively perceive objects as either being in the foreground or the background. They either stand out prominently in the front (the figure) or recede into the back (the ground)



6. Symmetry

• The Law of Symmetry is the gestalt grouping law that states that elements that are symmetrical to each other tend to be perceived as a unified group



7. Smelly Cat

- Refers to similarity between form and meaning of idea that certain visual forms are associated with specific meanings and can evoke feelings in the brain.
- Ex-image of smelly cat



CONSTRUCTIVISM THEORY

- Given by Julian Hochberg a psychology professor at Columbia University.
- He found that human eyes are constantly in motion as they scan an image.
- He came up with this theory to explain "eye fixations" as a way of viewers to make sense of their own perceptions.
- When we look at anything, we have to piece it together which is done through a series of rapid eye movement that assemble the blueprint of what we are looking at while at the same time comparing the results to memory and past associations.

Eye tracking methodology

- The analogy between eye and camera is a false one.
- For visual system there is no fixed image like a photograph.
- The image on the retina is in constant motion as eyes continuously move gathering information in a world that is also constant in motion.
- The image that we perceive is a mental image a stable configuration created by brain.

- Eye tracking apparatuses have been in use for more than 70 years that precisely show what viewers are looking at and the order in which they are processing available visual information. They record 3 main kind of information-
- Fixation frequency Total number of fixations a viewer makes on an area of the visual field
- Fixation duration Related measure derived from summing the length of individual fixations is how long generally measured in milliseconds
- Fixation sequence hierarchial mapping that records the order in which a viewer scans the visual information.