

# Visual Perception

# Gestalt psychology

- Perception = recognition of objects from basic visual elements
- The whole “gestalt” is greater than the sum of its parts
- When elements are placed in groups that define an object we tend to see the group and not the elements
- Discover the principles used by the *visual* system to group elements

# Gestalt principles

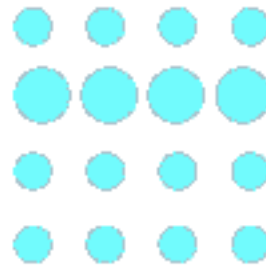
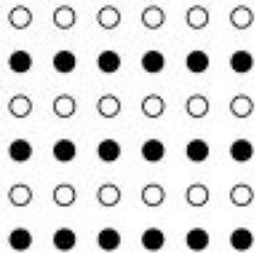
- Describe how people organise visual elements into a meaningful whole
  - Figure/Ground
  - Proximity
  - Similarity
  - Symmetry
  - Continuity
  - Closure
  - <http://graphicdesign.spokanefalls.edu/tutorials/process/gestaltprinciples/gestaltprinc.htm>



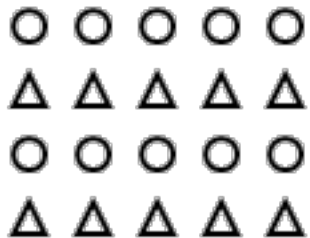
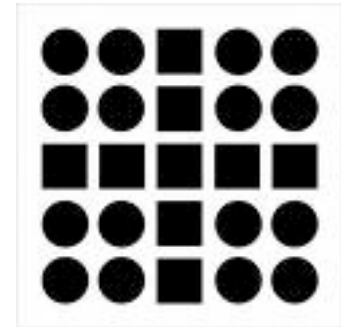
# Figure-ground

- **We perceive the environment by differentiating between objects and their backgrounds**
- **We have a natural tendency to perceive gestalt, whole entities**
- **We strive to find the simplest solutions to incomplete visual information –**

# What do you see here?



Similarity: Size



# Similarity

Things which share visual characteristics such as shape, size, color, texture, or orientation are seen as belonging together

- Unity occurs because the triangular shapes at the bottom of the eagle symbol look similar to the shapes that form the sunburst.

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- The figure on the far right becomes a focal point because it is dissimilar to the other shapes.



# Similarity 2

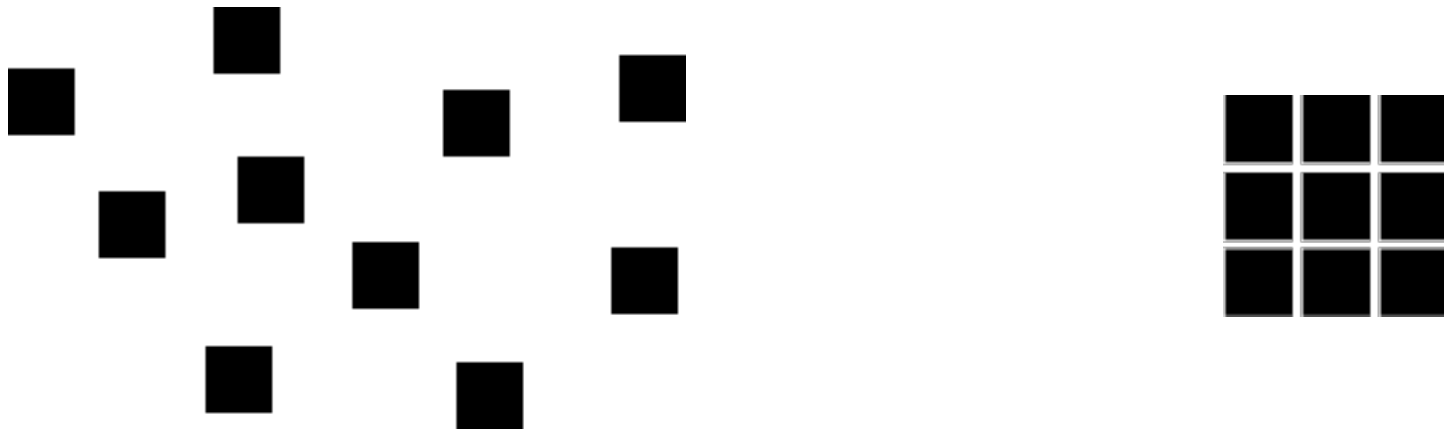
- When similarity occurs, an object can be emphasised if it is dissimilar to the others.
- This is called anomaly.
- Focal point of attention





# Proximity

- When elements are placed close together. They tend to be perceived as a group.



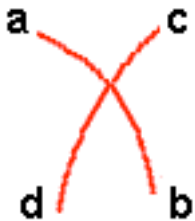


# Common Fate

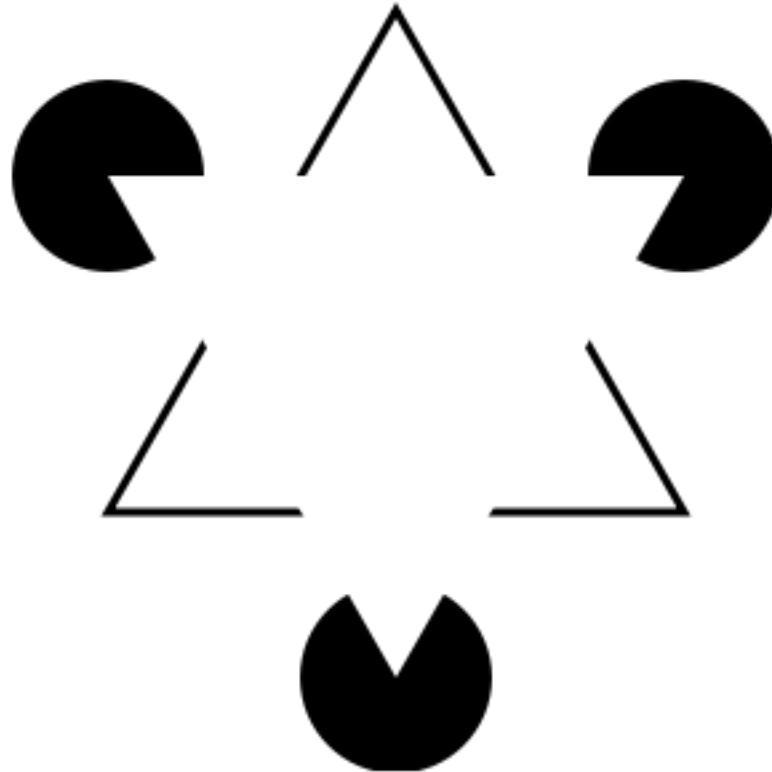
- When objects move in the same direction, we tend to see them as a unit.
- <http://www.andyrutledge.com/common-fate.php>

# Law of good continuation

- Contours based on smooth continuity are preferred to abrupt changes of direction
- The tendency to perceive unseen parts of an object as continuing in a predictable way



# Kanisza's Triangle



# Closure

- Closure occurs when an object is incomplete or a space is not completely enclosed
- If enough of the shape is indicated, people perceive the whole by filling in the missing information

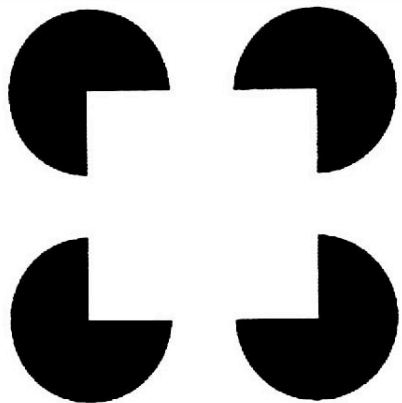


Figure 25. Illusory contours as seen in the Kanizsa figure.



# Conclusion

- **Gestalt Principles can be used to –  
impose a logical structure on UI's**
- **help people create logical groupings  
and increase visibility and  
comprehensibility of UI**