

## VISUAL PERCEPTION

**Visual perception** is the ability to interpret the surrounding environment by processing information that is contained in visible light. The resulting perception is also known as **eyesight, sight, or vision** (adjectival form: *visual, optical, or ocular*).

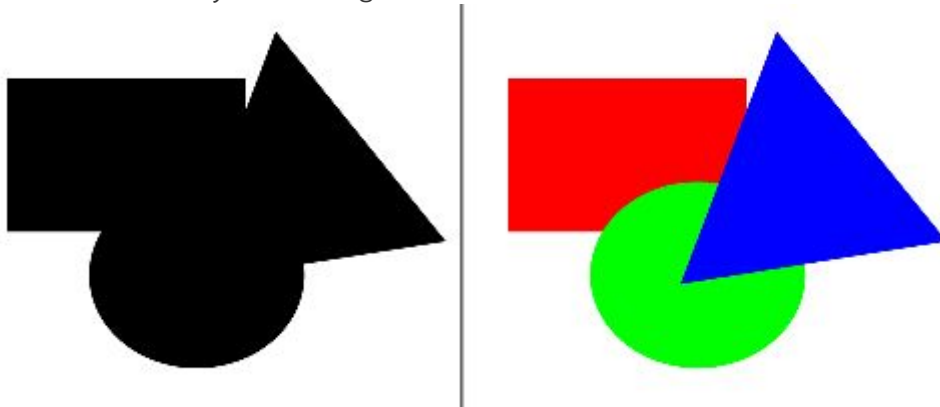
## The Key Ideas Behind Gestalt Theory

When human beings see a group of objects, we perceive their entirety before we see the individual objects. We see the whole as more than the sum of the parts, and even when the parts are entirely separate entities, we'll look to group them as some whole.

### LAW OF PRÄGNANZ (GOOD FIGURE, LAW OF SIMPLICITY)

*"People will perceive and interpret ambiguous or complex images as the simplest form(s) possible."*

This is the fundamental principle of gestalt. We prefer things that are simple, clear and ordered. Instinctually these things are safer.



*Law of Prägnanz (Good Figure, Law of Simplicity).*

When confronted with complex shapes, we tend to reorganize them into simpler components or into a simpler whole.

### CLOSURE

*"When seeing a complex arrangement of elements, we tend to look for a single, recognizable pattern."*

With closure, we instead combine parts to form a simpler whole. Our eye fills in the missing information to form the complete figure.



### *Closure.*

In the left image above, you should see a white triangle even though the image is actually comprised of three black Pac-Man-like shapes.

The key to closure is providing enough information so the eye can fill in the rest. If too much is missing, the elements will be seen as separate [PARTS](#) instead of a whole. If too much information is provided, there's no need for closure to occur.

### **SYMMETRY AND ORDER**

*"People tend to perceive objects as symmetrical shapes that form around their center."*

Symmetry gives us a feeling of solidity and order, which we tend to seek. It's our nature to impose order on chaos. This principle leads us to want balance in composition, though our compositions don't need to be perfectly symmetrical to be in balance.



### *Symmetry and Order.*

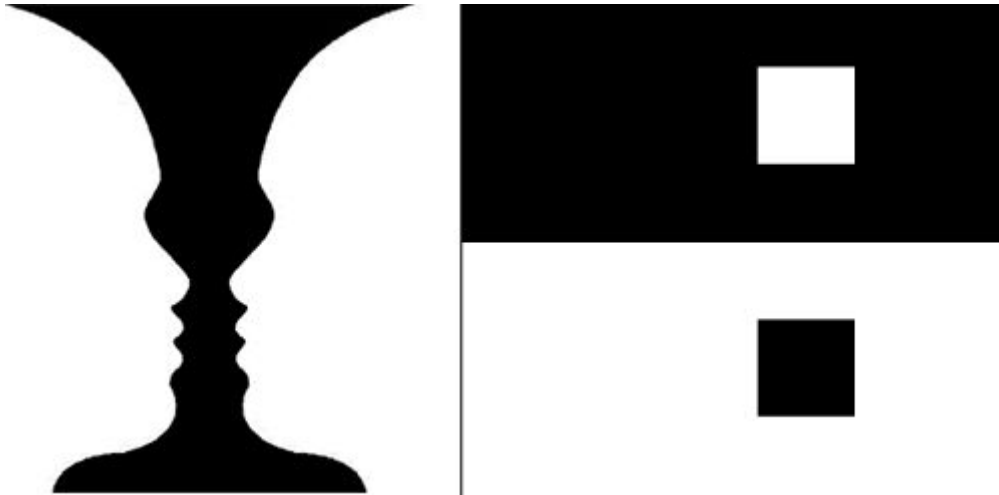
In the image above, you should see three pairs of opening and closing brackets. The principle of proximity, which we'll get to later in this post, might suggest we should see something else. That suggests symmetry takes precedence over proximity.

Since our eyes will quickly find symmetry and order, these principles can be used to effectively communicate information quickly.

### **FIGURE/GROUND**

*"Elements are perceived as either figure (the element in focus) or ground (the background on which the figure rests)."*

Figure/ground refers to the relationship between positive elements and negative space. The idea is that the eye will separate whole figures from their background in order to understand what's being seen. It's one of the first things people will do when looking at any composition.



### *Figure and Ground.*

The figure/ground relationship can be either stable or unstable depending on how easy it is to determine which is which. The classic example of where the relationship is unstable is the left image above. You either see a vase or two faces depending on whether you see the black color as figure and the white as ground, or vice versa.

Two [RELATED](#) principles can help us:

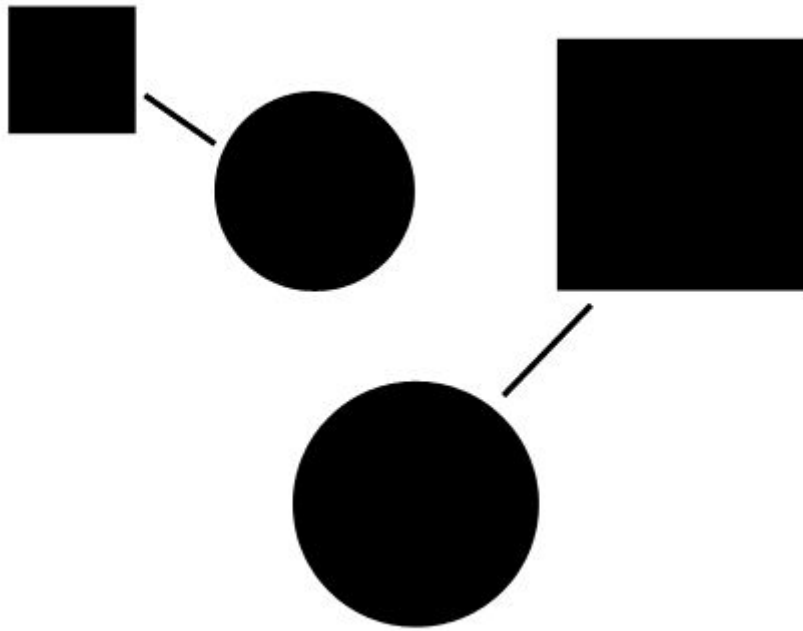
- **Area**  
The smaller of two overlapping objects is seen as figure. The larger is seen as ground. You can see this in the right image above. The smaller shape is the figure regardless of color.
- **Convexity**  
Convex rather than concave patterns tend to be perceived as figures.

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### **UNIFORM CONNECTEDNESS**

*“Elements that are visually connected are perceived as more related than elements with no connection.”*

In the image below, lines connect two pairs of elements. This connection leads us to perceive that the connected elements are related to each other in some way.



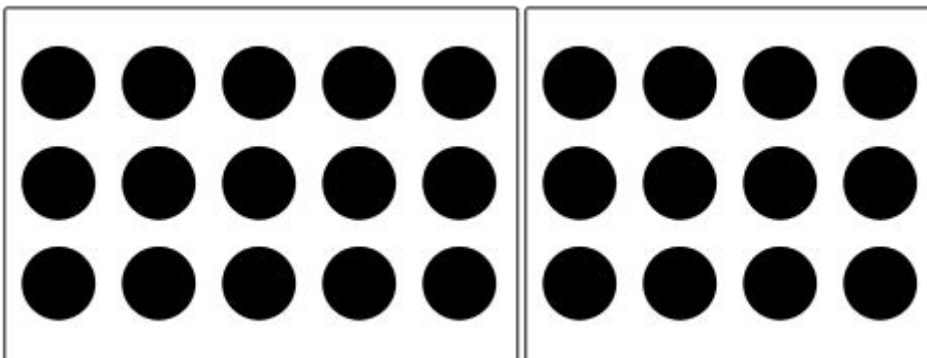
#### *Uniform Connectedness.*

Of all the principles suggesting objects are [RELATED](#), uniform connectedness is the strongest. In the image above, even though we see two squares and two circles, we see the square–circle pairs as more strongly [RELATED](#) because they are visually connected. Notice that the lines don't need to touch the elements for the connection to be perceived.

#### **COMMON REGIONS**

*"Elements are perceived as [PART](#) of a group if they are located within the same closed region."*

Another way to show a connection between elements is to enclose them in some way. Everything inside the enclosure is seen as [RELATED](#). Everything outside the enclosure is seen as separate. The circles in the image below are all the same, yet we see two distinct groups, with the circles in each enclosure related in some way.



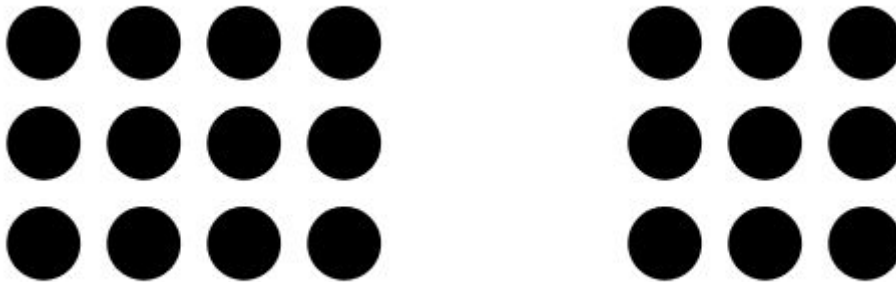
#### *Common Regions.*

The typical way to show a common region is to draw a box around the related elements like I've done above. Placing the elements on a different background color than their immediate surroundings will also work.

#### **PROXIMITY**

*“Objects that are closer together are perceived as more related than objects that are further **APART**.”*

Proximity is similar to common regions but uses space as the enclosure. When elements are positioned close to one another, they are seen as **PART** of a group rather than as individual elements. This is especially true when the elements in the group are closer to each other than they are to any elements outside the group.



*Proximity.*

The objects don't need to be similar in any other way beyond being grouped near each other in space in order to be seen as having a proximity relationship.

#### **CONTINUATION**

*“Elements arranged on a line or curve are perceived as more **RELATED** than elements not on the line or curve.”*

It's instinct to follow a river, a path or a fence line. Once you look or move in a particular direction, you continue to look or move in that direction until you see something significant or you determine there's nothing significant to see.



*Continuation.*

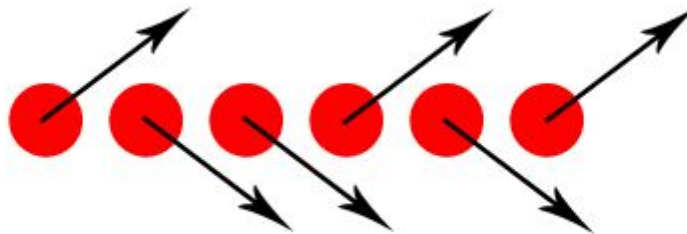
Another interpretation of this principle is that we'll continue our perception of shapes beyond their ending points. In the image above, we see a line and curve crossing instead of four distinct line and curve segments that meet at a single point.

#### **COMMON FATE (SYNCHRONY)**

*“Elements that move in the same direction are perceived as more **RELATED** than elements that are stationary or that move in different directions.”*

Regardless of how far **APART** the elements are placed or how dissimilar they appear, if they are seen as moving or changing together, they'll be perceived as being related.

The elements don't need to be moving for the principle of common fate to be present. It's more that they are seen as having a common destination. For example, if four people are clustered together, but two are observed heading toward the right, they will be seen as having a common fate. Even if two are only *looking* in the same direction, they'll be perceived as having a common fate.



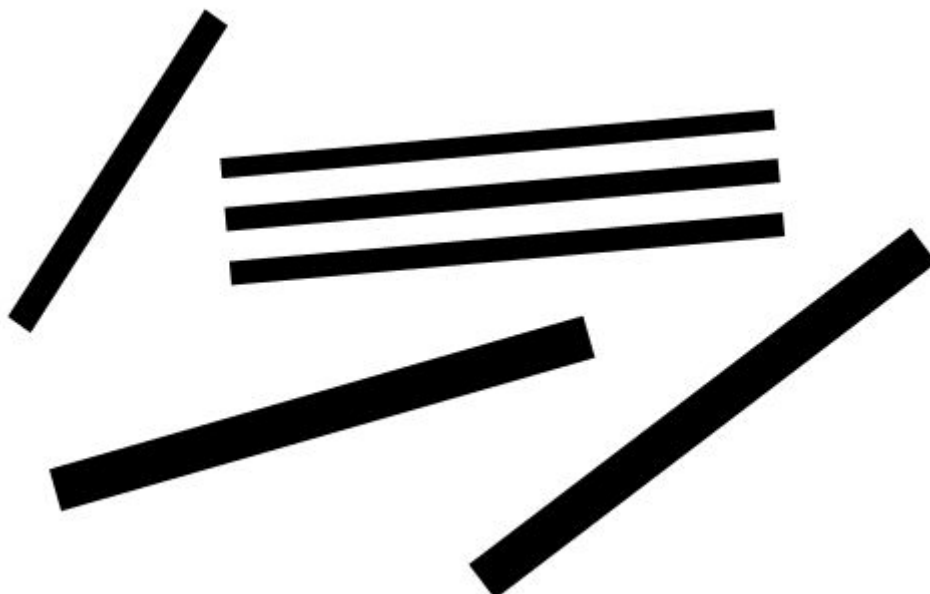
#### *Common Fate (Synchrony).*

In the image above, the arrows are enough to indicate the elements share a common fate. While movement or change isn't necessary, both are still a stronger indication of common fate than things like arrows or looking in the same direction which only imply movement.

#### **PARALLELISM**

*"Elements that are parallel to each other are seen as more related than elements not parallel to each other."*

This principle is similar to the common fate principle above. Lines are often interpreted as pointing or moving in some direction. Parallel lines are seen as either pointing or moving in the same direction and are thus related.



#### *Parallelism.*

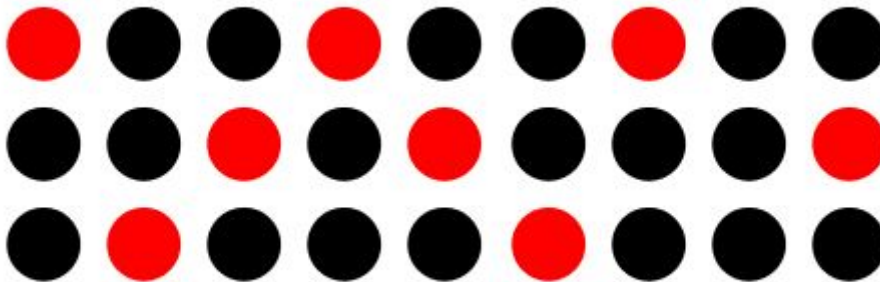
It should be noted that for parallelism to be perceived, the lines can also be curves or shapes, though with the latter the shapes should be somewhat line-like in order for them to appear parallel.

### **SIMILARITY**

*“Elements that share similar characteristics are perceived as more related than elements that don’t share those characteristics.”*

Any number of characteristics can be similar: color, shape, size, texture, etc. When a viewer sees these similar characteristics, they perceive the elements as being related due to the shared characteristics.

In the image below, red circles are seen as related to the other red circles and black circles to black circles due to the similarity in color. Red and black circles are seen as dissimilar to each other even though they’re all circles.



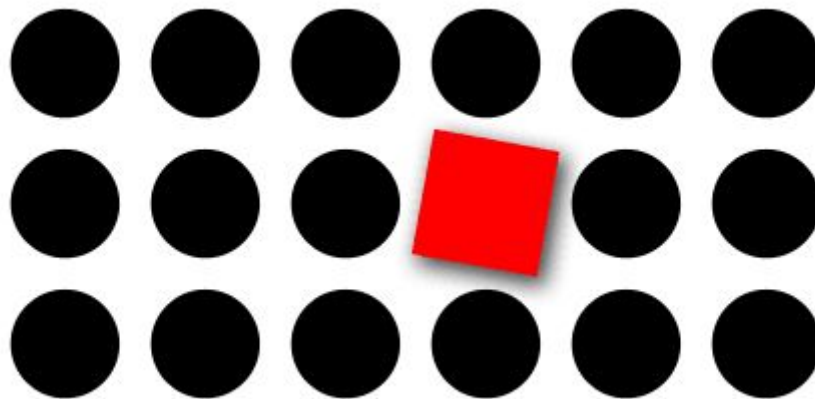
### *Similarity.*

An obvious place to find similarity online is in the color of links. Typically, links within content will be styled the same way, often blue and underlined. This lets the viewer know that the different pieces of text are related. Once one is discovered to be a link, it communicates the others are also links.

### **FOCAL POINTS**

*“Elements with a point of interest, emphasis or difference will capture and hold the viewer’s attention.”*

This principle suggests that our attention will be drawn toward contrast, toward the element that is unlike the others in some way. In the image below, your eye should be drawn to the square. It’s a different shape and color from the other elements. I’ve also given it a drop shadow to further emphasize it.



#### *Focal Points.*

The principle of focal points likely arises out of our need to quickly identify the unknown to alert us to potential danger.

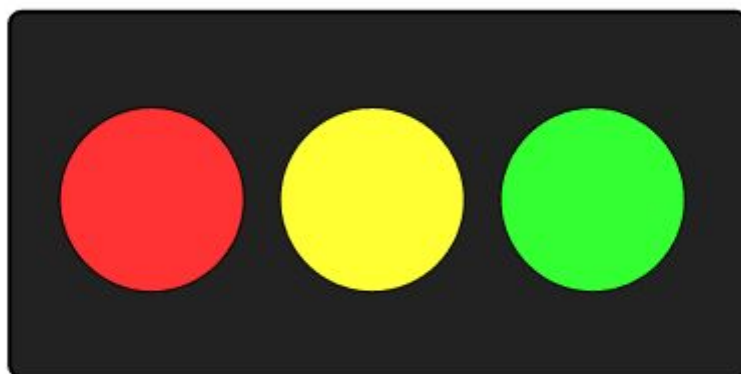
The principles of similarity and focal points are connected, and focal points can't be seen without the presence of similarity among other elements.

#### **PAST EXPERIENCES**

*"Elements tend to be perceived according to an observer's past experience."*

Past experience is perhaps the weakest gestalt principle. In conjunction with any of the other principles, the other principle will dominate over the past experience principle.

Past experience is unique to the individual, so it's difficult to make assumptions about how it will be perceived. However, there are common experiences we all share. For example, a lot of color meaning arises out of past experience.



#### *Past Experiences.*

Having seen traffic lights throughout our lives, we expect red to mean stop and green to mean go. You probably see the image above as a traffic light on its side, because of the three common colors. That's past experience at work.

Many of our common experiences also tend to be cultural.