Form Perception:

- Mondegreens – Misperceptions of common phrases
- Feature detectors might detect different lines and angles and integrate them
  - Doesn’t explain complex differences and viewing angles for objects (partial views)
- When we interpret things, we selectively ignore many features that aren’t necessary
- **Gestalt Psychology** – A theoretical approach that emphasizes the role of organized wholes in perception and other psychological processes
  - Parsing input – How you separate a scene into individual objects, linking together the parts of each object but not linking one object’s parts to another
- **Similarity** – In perception, a principle by which we tend to group like figures, especially by color and orientation
- **Proximity** – In perception, the closeness of two figures. The closer together they are, the more we tend to group them together perceptually
- **Good Continuation** – A factor in visual grouping; we tend to perceive contours in a way that alters their direction as little as possible
- **Subjective Contours** – Perceived contours that do not exist physically. We tend to complete figures that have gaps in them by perceiving a contour as continuing along its original path
- **Closure** – Tends to interpret forms in the simplest way possible
- **Brain also separates the object from its setting (figure and ground)**
- **Reversible Figure** – A visual pattern that easily allows more than one interpretation, in some cases changing the specification of figure and ground, in other cases changing the perceived organization in depth
- Interpretation is based on experience and are more correct than not
- Prefer perceptual interpretations that explain all the information contained within the stimulus
- Avoid interpretations that involve contradiction
- Avoid interpretations that depend on accident or coincidence

Network Models of Perception:

- **Visual Search** – A task in which participants are asked to determine whether a specified target is present within a field of stimuli
  - Can sift through small samples and large samples with equal time if the object in question is distinctly different
- **Feature Net** – A hierarchal model of pattern recognition involving a network of detectors and having feature detectors as the network’s starting point
- Old models only went from bottom to top (input pushes process forward and is “data driven”)
- Newer models have “top-down” or “knowledge-driven” processes via expectations by observer
- Interpretation can be described by knowledge-driven hypothesis about stimulus with the hypothesis making the visual system more receptive to the relevant data coming from feature detectors
- Detectors within the network can inhibit other incompatible detectors to prevent contradiction
- **Geons** – Simple geometric figures, such as cubes, cylinders, and pyramids, that can be combined to create all other shapes. An early step in some models of object recognition is determining which geons are present
- **Visual agnosia** – Disease that causes patients to be unable to recognize what they see
  - Can form structural descriptions but can’t integrate to form one perception

Perceptual Constancy:

- **Perceptual Constancy** – The accurate perception of certain attributes of a distal object, such as its shape, size, and brightness, despite changes in the proximal stimulus caused by variations in our viewing circumstances
  - **Size constancy** – Correctly perceiving the sizes of objects in the world despite the changes in retinal-image size created by changes in viewing distances
  - **Shape Constancy** – Correctly perceiving shapes of objects despite changes in the retinal image created by changes in viewing angles
  - **Brightness Constancy** – Correctly perceiving brightness of objects whether they are illuminated by dim or strong light
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- Relationships may help with constancy
  - Objects are usually seen against a background to compare it to
- **Unconscious Inference** – A process postulated by Helmholtz to explain certain perceptual phenomena such as size constancy. For example, an object is perceived to be at a certain distance, and this is unconsciously taken into account in assessing its retinal image size, with the result that size constancy is maintained
  - Inverse relationship between distance and retinal size image (multiplication)

**Distance Perception:**

- **Depth Cues** – Sources of information that signal the distance from the observer to the distal stimulus
- **Binocular Disparity** – A depth cue based on the differences between the two eyes’ views of the world. This difference becomes less pronounced the farther an object is from the observer
- **Monocular Depth Cues** – Features of the visual stimulus that indicate distance even if the stimulus is viewed with only one eye
- **Pictorial Cues** – Patterns that can be represented on a flat surface in order to create a sense of a three-dimensional object or scene
- **Interposition** – A monocular cue to distance that relies on the fact that objects farther away are blocked from view by closer objects
- **Linear Perspective** – A cue for distance based on the fact that parallel lines seem to converge as they get farther away from the viewer
- Texture gradients are also used as pictorial cues
- **Motion Parallax** – A depth cue based on the fact that, as an object moves, the retinal image of nearby objects move more rapidly than do the retinal images of objects farther away
- As we approach an object, it gets larger, and as we move away it gets smaller
- **Optic Flow** – Change in size of objects as we move closer or farther away

**Motion Perception:**

- Cells firing are direction specific (only fire when object moves in one direction)
- **Motion Detectors** – Cells in the visual cortex that are sensitive to an image moving in a particular direction across the retina
- **Apparent Movement** – The perception of movement produced by stimuli that are stationary but are presented first at one positions and then, at an appropriate time interval, presented at a different position
- People take own movements into account when judging the positions of objects in the world so that they have position constancy
  - Allows you to move your body without it looking like the world is moving by canceling-out theory
- **Induced Motion** – Perceived movement of a stationary stimulus, usually caused by movement of a surrounding framework or nearby objects
- Tend to perceive larger objects as still and smaller objects as moving
- If one object encloses another, the first tends to act as a stationary frame so that we perceive the enclosed object as moving
- Induced motion of the self – Feeling like you’re moving when you’re on something not moving but perceive is (like on a bridge that you perceive as moving)
- **Correspondence Problem** – As your view changes, the perceptual task of determining which aspects of the current view correspond to which aspects of the view seen a moment ago
- Some things are just blurs to the visual cortex, so we rely on when it’s “here” and then “there” to infer