ATTENTION:

- A lot of what your brain is doing that you don't have conscious awareness of.

- **System 1:**
  - Rapid and unconscious.
  - Usually gives you correct information

- **System 2:**
  - Effortless and conscious.
  - Is problematic and can give you the wrong information.

- Both have a limit of what can be consciously attended (7+ or - 2 items).

- **Auditory Attention:**
  - Dichotic listening.

  - In one ear you could be listening to a story and in the other, you could be listening to a radio.

  - Because of this, each ear gets a separate channel.

  - Subjects typically can follow one channel but not the other.

  - People are capable of attending to 1 of the 2 channels.

  - **Cocktail Party Effect:**
    - Highly salient stimuli can get through the non-attended channel.

    - People are able to allocate their attention if the information in different channels switches.

- **Visual Attention:**
  - **Cueing experiments:**
    - The subject never moves their eyes.

    - The cue is valid on 80% of trials and invalid on 20%.

    - Attention at the cued location enhances performance.

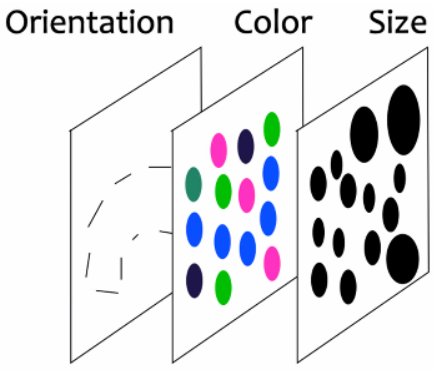
    - Attention is like a spotlight that moves about the visual field "enhancing" perception.

- **Perception without attention:**
  - Some visual features seem to be detected everywhere in parallel.

- This is known as a popout

- Some visual features seem to be detected everywhere in parallel.
- Objects with the target feature “pop-out” without the apparent search.

- **Feature binding requires attention:**
  - Primitive feature maps are parallel.
  - Multiple features are bounded to form a whole person or object.
  - Combining features at each location requires attention.
  - Complex objects are only perceived within the spotlight of attention.



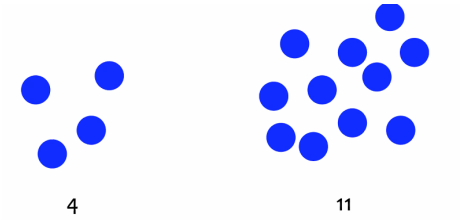
  - All of these are separated from each other and there is an attentional window (spotlight).

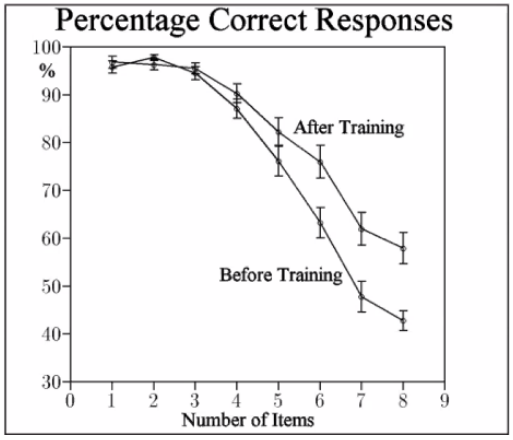
- **Object-based attention:**
  - Dot detection is faster at a right location than at a left location.
  - Attention seems to jump between objects but spread within objects.
  - Attention seems to select objects, but not locations

- Multiple objects are also being tracked.

- When targets and distractors are “mered”, targets can’t be separately tracked.

- **Subitizing:**





- Some studies of enumeration performance suggest a qualitative change in enumeration procedures at about n = 4.

- This is called subitizing.

- In some accounts, it is attributed to the allocation of attention indices.

- Above n=4, enumeration depends on counting, and both the number of errors and RT increase with n.

- **Hemispatial Neglect:**
  - Brain injury to one parietal lobe can lead to an absence of attention in visual hemifield, called hemispatial neglect or hemineglect.

  - Patients with hemineglect can still “see” on that side, but don’t “notice” anything there.

  - They are not able to allocate enough attention to the other side.