

1. Which attention model emphasizes the early selection of information based on physical characteristics before semantic processing?
 - a. **Broadbent's Filter Model**
 - b. Filter Attenuation Theory
 - c. Late Selection View
 - d. Dual Processing Model
2. Dichotic listening tasks are often related to the "Cocktail Party Effect." What does this term refer to in the context of auditory attention?
 - a. **Ability to focus on multiple auditory stimuli**
 - b. Difficulty in processing speech sounds
 - c. Selective attention to visual stimuli
 - d. Hearing impairment in crowded environments
3. I am studying a rodent model in my lab while he is performing multiple experiments. I use an intracellular recording method to record a single neuron from the occipital lobe to determine how the rodent's neuron reacts to different tasks. Now choose the correct option from below which is most appropriate in the case of my experiment
 - a. I am measuring the structural differences between the thickness of the soma using the single neuronal recording method
 - b. I am measuring the blood oxygen level dependent activity of the neuron using the intracellular recording method
 - c. I am measuring the Local field potential using the single neuronal recording method
 - d. **I am using the single neuronal recording method to record the average voltage changes across all the occipital lobe neurons.**
4. Understanding top-down and bottom-up attention can be confusing sometimes. Are they different, or how do they interplay? Choose the most appropriate option from the list below
 - a. Top-down attention refers to the involuntary capture of attention by stimuli, while bottom-up attention involves deliberate focus guided by goals.
 - b. **Top-down attention involves voluntary allocation of attention based on goals and expectations, while bottom-up attention is driven by salient sensory stimuli in the environment.**
 - c. Top-down attention is exclusively driven by external stimuli, while bottom-up attention is internally generated based on prior knowledge and experience.
 - d. Top-down attention and bottom-up attention are terms used interchangeably to describe the same cognitive process
5. Agent X is tasked with identifying enemy signals amidst a barrage of background noise. Applying Signal Detection Theory, what does it mean when Agent X has a high hit rate and a low false alarm rate?

- a. Agent X is an exceptional spy, accurately detecting enemy signals and rarely mistaking harmless noise.
 - b. Agent X is overly cautious, often mistaking innocent background noise for enemy signals but rarely missing actual threats.
 - c. Agent X is a risk-taker, frequently identifying enemy signals but also raising alarms for harmless background noise.
 - d. Agent X is struggling with the task, frequently missing enemy signals and misinterpreting harmless background noise.

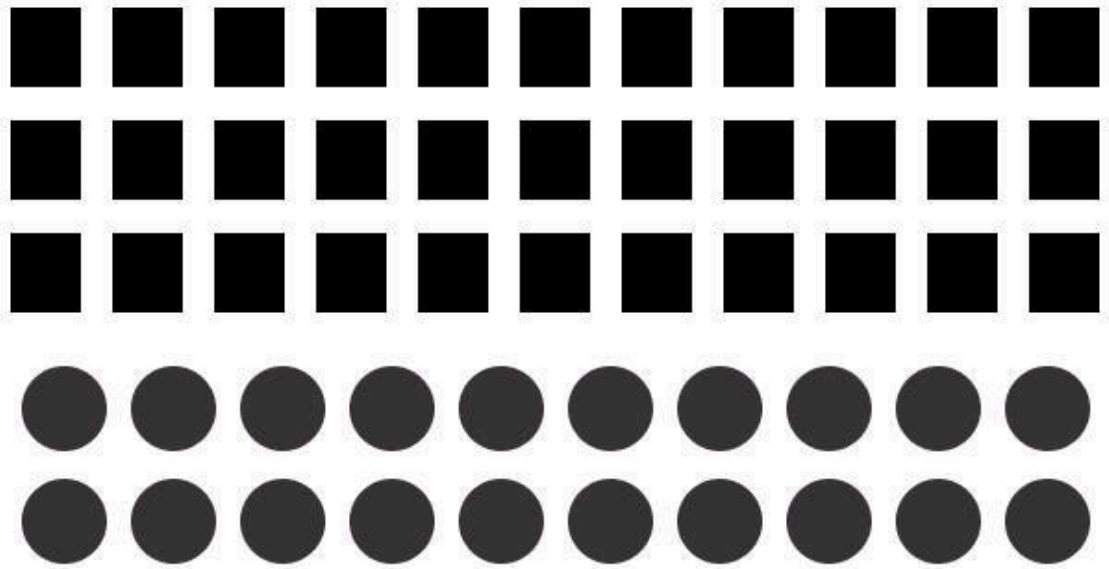
- 6. Which of the following patterns on the psychometric curve would suggest a well-designed test with a good range of item difficulty?
 - a. A steep curve, with most participants scoring high on easy items and low on difficult items.
 - b. A flat curve with a consistently high performance across all difficulty levels.
 - c. An S-shaped curve where performance is low on easy items, peaks at moderate difficulty, and declines on difficult items.
 - d. A jagged curve with erratic spikes and dips in performance across all difficulty levels.

- 7. If a participant is required to perform a complex decision-making task and experiences an increase in reaction time (RT), what likely impacts their accuracy?
 - a. Accuracy will also increase proportionally.
 - b. Accuracy will decrease, showcasing the speed-accuracy tradeoff.
 - c. Accuracy will remain unaffected, indicating speed accuracy tradeoff.
 - d. Accuracy will become perfect, compensating for the extended reaction time.

- 8. You are attending a crowded music festival with multiple stages featuring different genres of music. Despite the lively atmosphere and diverse performances, you find yourself engrossed in a conversation with a friend. This ability to focus on your conversation while ignoring the surrounding music represents:
 - a. Divided attention.
 - b. Transient attention.
 - c. Selective attention.
 - d. Sustained attention.

- 9. Imagine you are attending a party with multiple conversations happening simultaneously. According to Broadbent's model, which stage of information processing is responsible for filtering out irrelevant conversations before further analysis?
 - a. Sensory input.
 - b. Filter processing.
 - c. Pattern recognition.
 - d. Response selection.

10. In the picture below, you can see a couple of square and rounded shapes. Though they all are separated by space, but perceptually, we can make some groups out of them i.e all the square shapes together create a perceptual group.

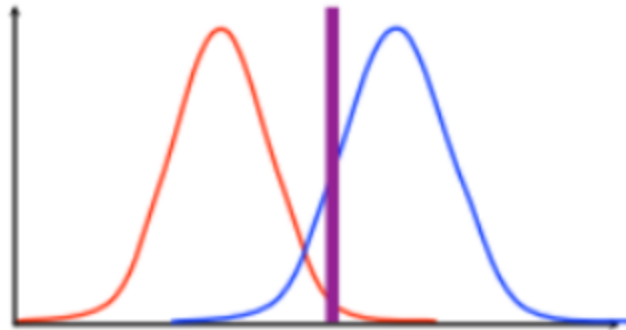


What kind of attention is crucial in gathering information and making perceptual grouping?

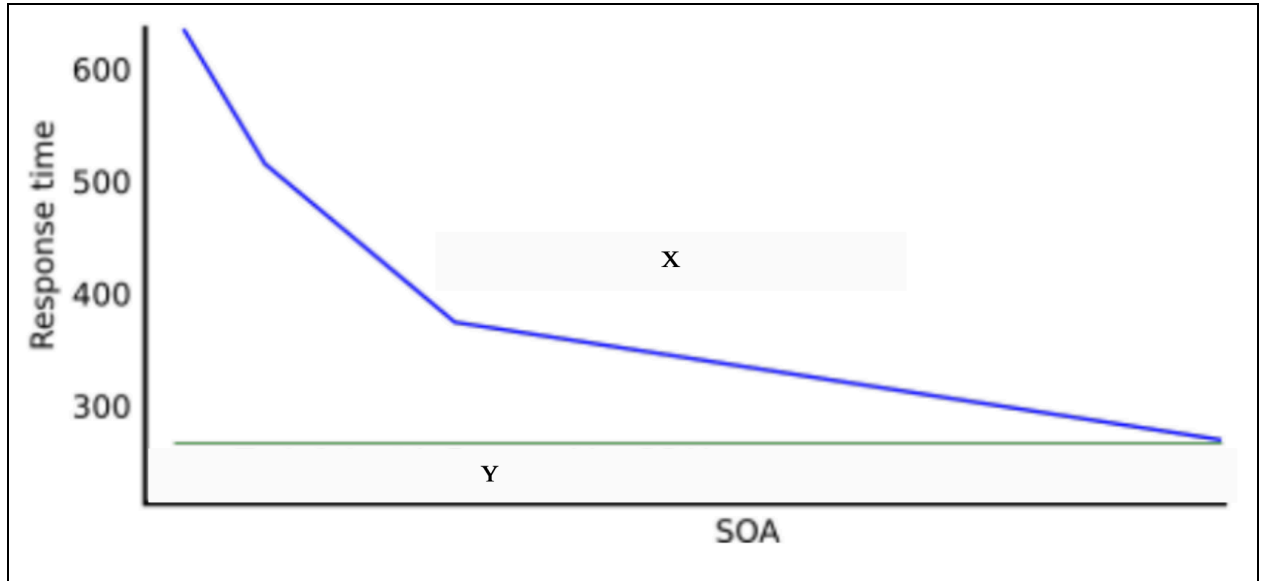
- a. Transient attention
 - b. Visual spatial selective attention
 - c. Temporal attention
 - d. Object-based attention
11. The dynamics of pupil diameter can be recorded using an eye tracker. Pupil constricts and dilates based on different situations and circumstances like changes in light intensity or cognitive processing. Choose the most appropriate option from the below
- a. Pupil can only be used to study the changes in light intensity, not anything else
 - b. Though pupil dynamics can be used to study cognitive processes it can't be used as study mental and behavioral disorders i.e ADHD
 - c. Pupil can be used only to study Attention, not other cognitive processes like Learning or memory.
 - d. None of the above is correct
12. The conflict between the Filter Attenuation Theory of Attention and Late Selection theories revolves around the crucial question:
- a. Whether irrelevant information is completely filtered before or after meaningful processing.
 - b. How attentional resources are allocated in the presence of irrelevant stimuli.
 - c. Whether working memory capacity influences the selection of irrelevant information.

- d. The extent to which sensory input is attenuated in the presence of attentional filters.
13. What do you mean by Intracellular recording?
- a. Measuring voltage or current across a membrane of a cell.
 - b. Neuronal activity measured in an area adjacent to a neuron.
 - c. Measure of an Action potentials
 - d. Interdisciplinary study of mind and its processes.
14. Eye-tracking systems measure _____
- a. Eye Movements
 - b. Gaze Maps
 - c. Pupil Dynamic
 - d. All of the above
15. What do you mean by Receptive field?
- a. region of receptor space in which the presence of a stimulus will alter the firing rate of that neuron.
 - b. attention operates in a stage containing rapidly decaying precategorical visual information
 - c. Measuring voltage or current across a membrane of a cell.
 - d. potential of the cell membrane.
16. Sarah is sitting in a crowded coffee shop, engrossed in a book. Suddenly, her friend waves at her from across the room. Without looking up, Sarah immediately recognizes her friend's gesture. What type of attention is Sarah using in this scenario?
- a. Overt attention
 - b. Inattentive attention
 - c. Covert attention
 - d. Passive attention
17. Alex is driving on a busy highway when he notices a flashing red traffic light ahead. He quickly shifts his gaze towards the signal, evaluating the need to slow down. What type of attention is Alex using in this situation?
- a. Covert attention
 - b. Selective attention
 - c. Overt attention
 - d. Divided attention
18. David is watching a magic show. The magician asks the audience to focus on a specific card while performing a sleight of hand. What attention phenomenon is the magician utilizing in this situation?
- a. Divided attention
 - b. Attention as a Spotlight

- c. Cocktail Party Effect
 - d. Involuntary attention
19. Alex is playing a video game that requires both shooting enemies and collecting items. Suddenly, a new wave of enemies appears, and he struggles to switch to collecting items. Which cognitive process is evident in this delay?
- a. Involuntary attention
 - b. Stroop Effect
 - c. Psychological Refractory Period
 - d. Reaction time
20. In _____, electrodes are placed outside the cell to detect the summed electrical activity of nearby neurons, providing information about action potentials and neural communication.
Answer: Extracellular recording
21. _____ is a neuroimaging technique that measures brain activity associated with blood flow.
Answer: fMRI (Functional Magnetic Resonance Imaging)
22. In terms of measuring rapid changes in neural activity, which technique is more suitable?
- a. EEG
 - b. fMRI
 - c. Both have equal sensitivity to rapid changes
 - d. Neither EEG or fMRI can capture rapid changes
23. Given figure is example of what in signal theory where Criterion is shifted towards Noise —



- A. Liberal Bias
 - B. Conservative Bias
 - C. No Bias
 - D. None of these
24. An experiment was conducted with 2 tasks shortly after each other (task 1 & task 2), the experimental data was then used to plot the graph given below. Identify the X and Y in the graph



- a. X - Task 1 influenced by SOA, Y - Task 2 not influenced by SOA
- b. X - Task 2 influenced by SOA, Y - Task 1 not influenced by SOA
- c. X - Task 2 not influenced by SOA, Y - Task 1 influenced by SOA
- d. X - Task 1 not influenced by SOA, Y - Task 2 influenced by SOA