Some spatial filtering studies are consistent with the contrast gain hypothesis. (Davis, Kramer, & Graham, 1983)

Some spatial cuing studies are consistent with the all-or-none mixture hypothesis. (Palmer & Moore, 2008)

1. Question
- Do spatial cuing and filtering depend on different kinds of selection?

2. Two Hypotheses
- Assumes that selective attention reduces information from unattended stimuli. (Contrast Gain)
  - Predicts a horizontal shift of the psychometric function. Thus, the effect of attention is on the threshold.

- Assumes that selective attention blocks information from unattended stimuli. (All-or-None Mixture)
  - Predicts a vertical scaling of the psychometric function. Thus, the effect of attention is on the asymptote.

3. Cuing Methods
- Display a stimulus at one of five locations.
- Can be cued or unattended.

4. Cuing Results
- Results are shown for one observer.
- Separation between cued and unattended locations causes a horizontal shift of the psychometric function.
- Separation between cued and unattended locations does not change the asymptote.
- These results are consistent with the contrast gain hypothesis.

5. Filtering Method
- Display two stimuli.
  - A target at the cued location and a foil at one of five unused locations.
  - The task is to report contrast polarity of the target and ignore the foil.
  - Other than location, the target and foil are from the same set of stimuli.

6. Two Psychometric Functions
- Target function: Very target contrast while keeping foil contrast fixed at a low value.
- Foil function: Very foil contrast while keeping target contrast fixed at a low value.

7. Filtering Results
- Results are shown for one observer.
- Separation between target and foil causes a vertical scaling of the foil psychometric function.
- Separation between target and foil does not change the target psychometric function.
- These results are consistent with the all-or-none mixture hypothesis.

8. Spatial Sensitivity and Asymptote Functions
- Sensitivity drops as one increases the separation between cued and unattended locations.
- Asymptotic performance does not change as one increases the separation.

9. Conclusion
- Spatial cuing and filtering are consistent with different kinds of selection.
- Spatial cuing results are consistent with the contrast gain and not with all-or-none mixture.
- Spatial filtering results are consistent with all or none mixture and not with contrast gain.

10. Discussion
Selection may depend on the relevance of the details.
- For cuing, the stimulus at an uncued location is irrelevant, so attention spreads to include the uncued locations.
- For filtering, the stimulus at an uncued location is relevant, so attention narrows to exclude the uncued location.

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