

Research Objective

The studies presented here examine if Gestalt grouping, in the form of an enclosing figure, is a source of interference during the retention of objects already stored in memory. It was hypothesized that Gestalt grouping would impact the accuracy of recall of the memorized elements.

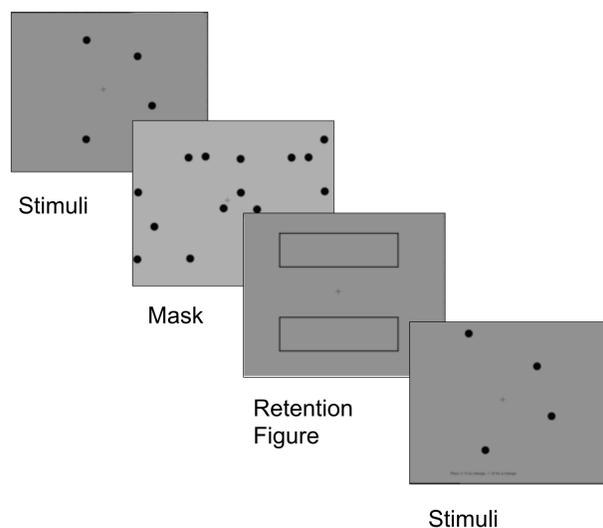
Background

Previous research has found that Gestalt principles of organization can affect how objects are stored in working memory (Woodman, et al, 2003). However, it is not clear whether this effect is due to how stimuli are encoded or how they are organized in storage.

General Method

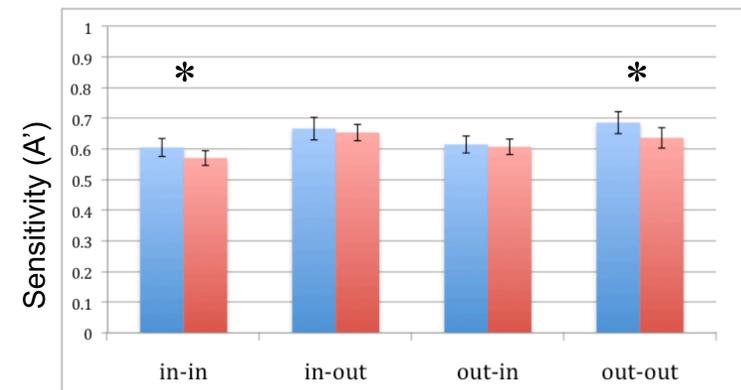
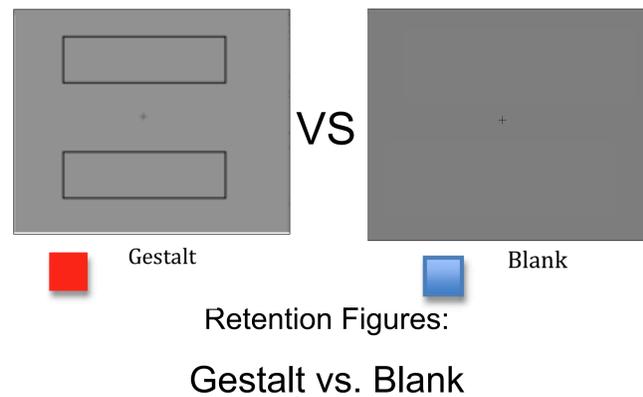
- 3 experiments conducted, each with 32 participants
- Bias and sensitivity were analyzed

Experiment Stimuli Order



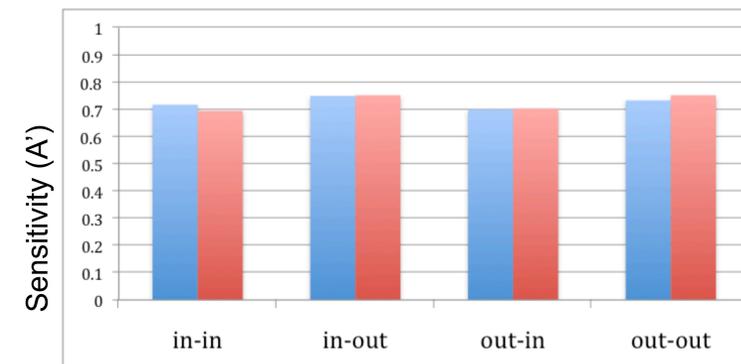
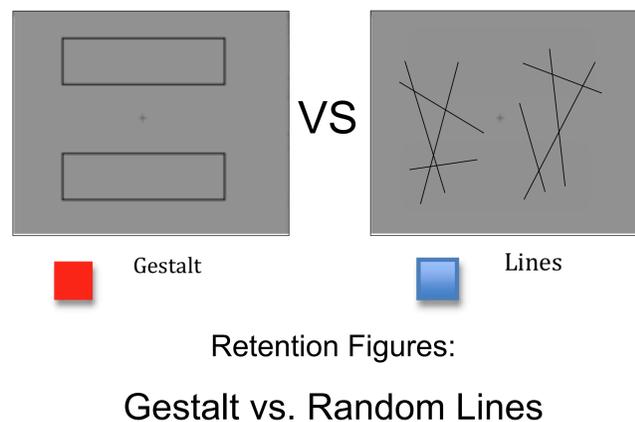
-Retention figures were set to display the two orientations [vertical and horizontal] randomly to eliminate any learning effects

Experiment 1



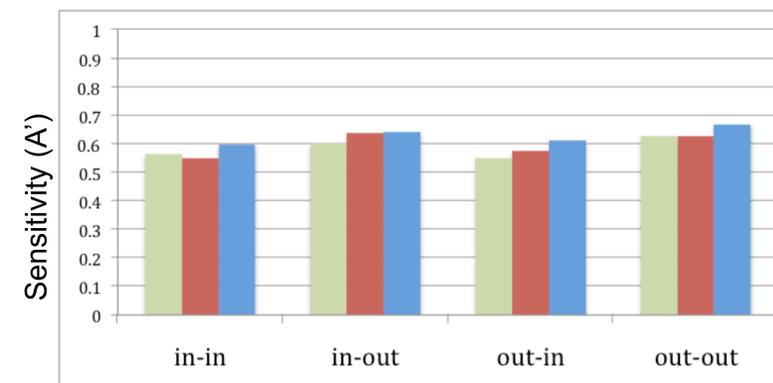
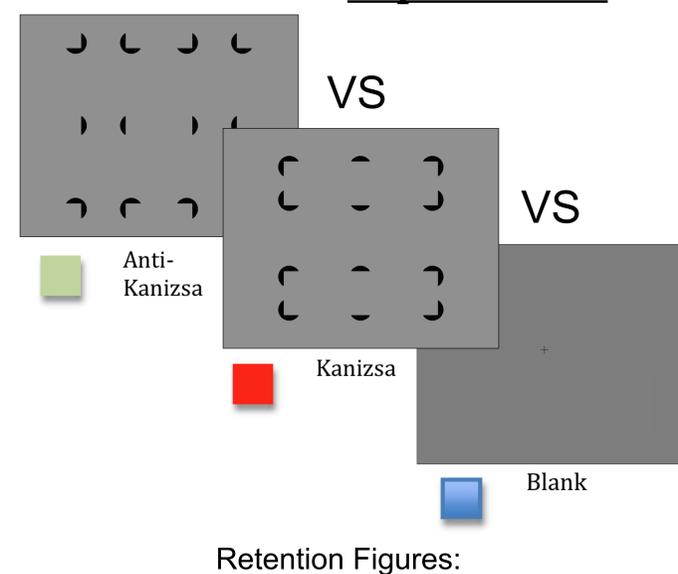
• In-In and Out-Out significantly different (p<.05)

Experiment 2



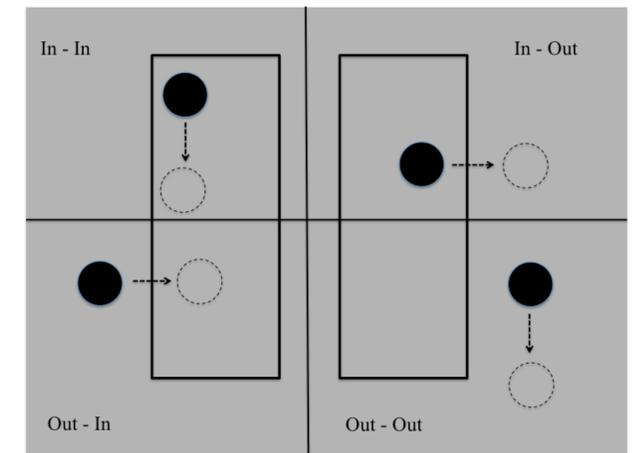
• No significant difference between gestalt and random lines in any condition

Experiment 3



• No differences between Kanizsa and Anti-Kanizsa
• In-In and Out-Out significantly different when Kanizsa data collapsed and compared to Blank

Spatial Movements



- Each dot was contained within a quadrant of the screen [lines denoting quadrants were not displayed]
- Stimuli dots could move in one of four combinations or not at all.
- 'In' and 'Out' are relative to the given retention figure.
- Only one dot, if any, would move at a time.

Results & Discussion

- A significant difference in accuracy was found between blank and gestalt figures in the In-In and Out-Out conditions in Exp 1
- No significant difference in accuracy between gestalt and random lines in any condition in Exp 2
- No differences in accuracy between Kanizsa and Anti-Kanizsa in any condition in Exp 3
- In-In and Out-Out significantly different when Kanizsa data collapsed and compared to Blank
- Accuracy declined with any form of retention figure compared to blank
- Interference not due to grouping stimuli with retention-interval display.