Supporting Materials for *Category-based and location-based volitional covert attention affect memory at different timescales*

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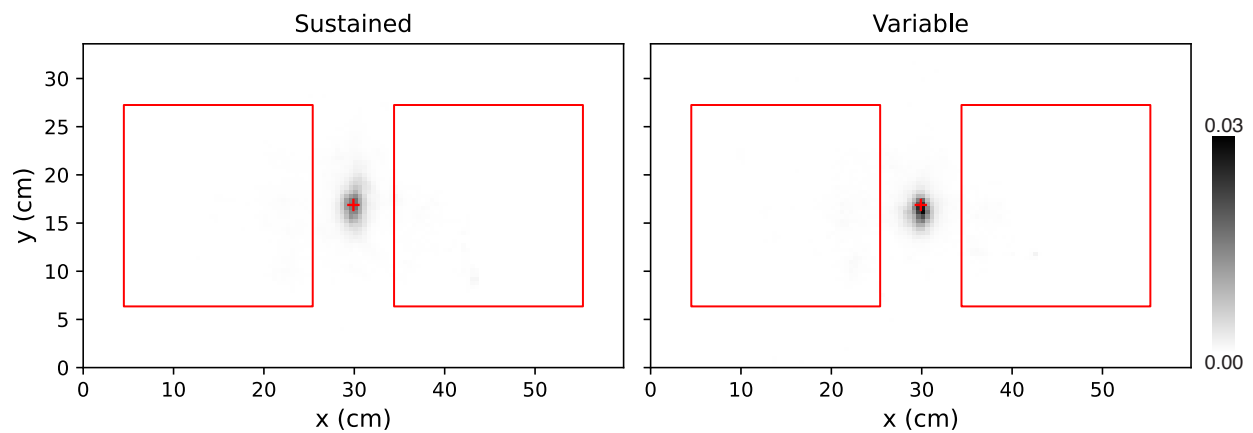
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Figure S1: **Gaze location histograms.** We divided the experimental display into 120 horizontal bins and 78 vertical bins, each comprising a roughly 0.5 cm square. The panels display the average proportions of time (throughout the duration of the experiment) participants spend looking at each location. The left panel displays data from participants in the sustained attention condition and the right panel displays data from participants in the variable attention condition. In both panels, the locations of the central fixation cross (red +) and composite images (red-outlined squares) are indicated.
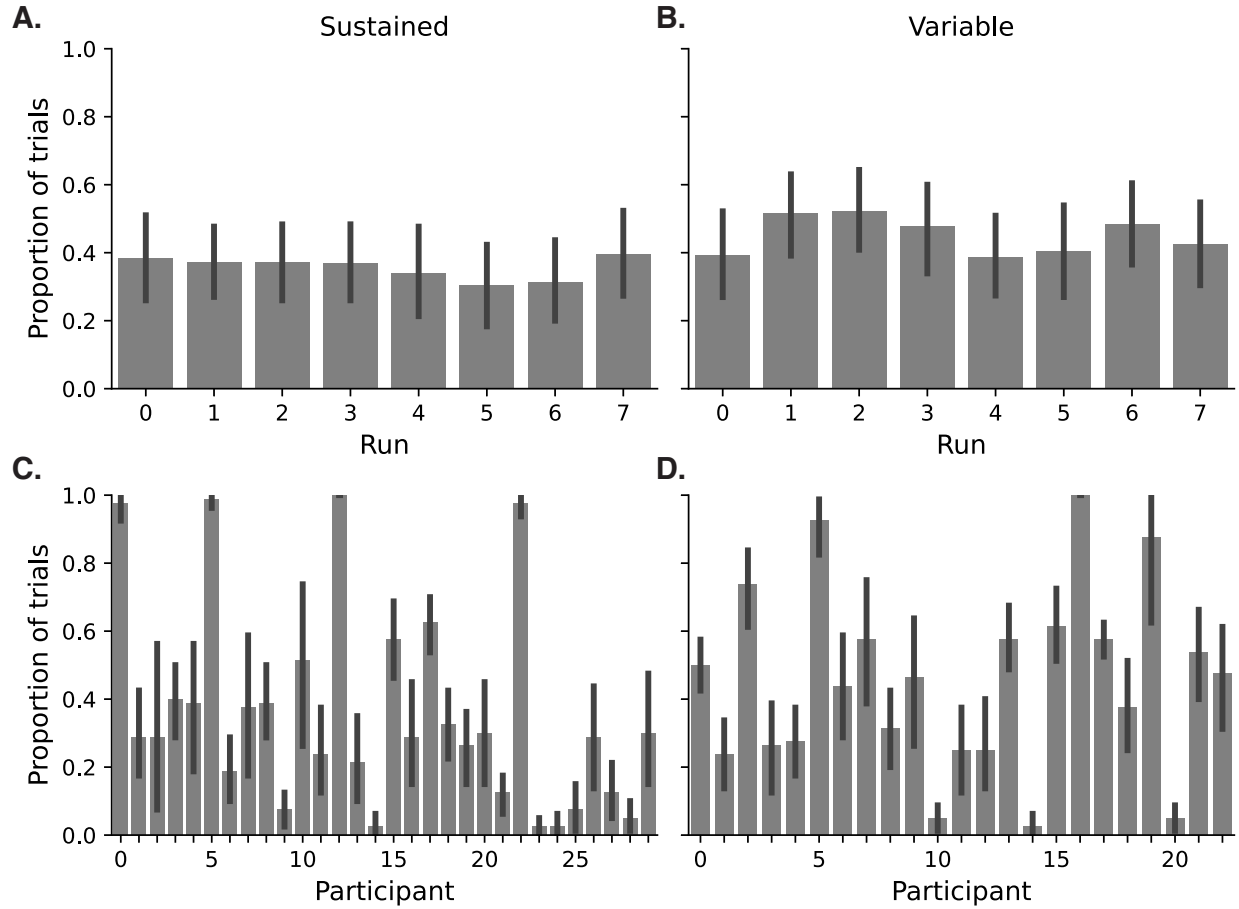
Figure S2: **Proportions of excluded trials.** We excluded from our analyses any images from trials where the participant's gaze touched on any part of the attended composite image (attended-side red squares in Fig. **??**). **A–B. Proportions of excluded trials, by run.** Across both experimental conditions (left: sustained attention; right: variable attention), the bars display the average proportions of presentations from each run where participants looked at any part of the attended composite image, for any non-zero duration. Error bars denote across-participant bootstrap-estimated 95% confidence intervals. **C–D. Proportions of excluded trials, by participant.** Across both experimental conditions (left: sustained attention; right: variable attention), the bars display the average proportions of presentations across different runs where the given pariticapants looked at any part of the attended composite image, for any non-zero duration. Error bars denote across-run bootstrap-estimated 95% confidence intervals.
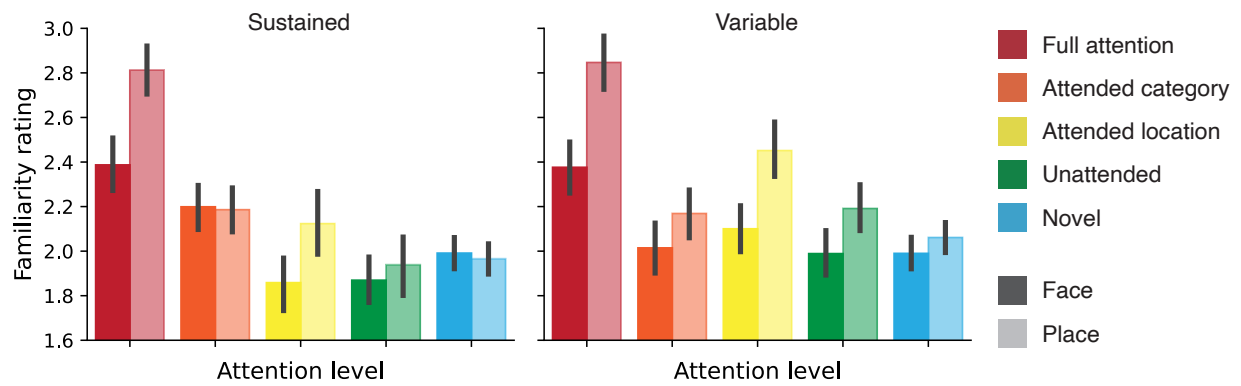
Figure S3: **Familiarity by attention level and stimulus category.** The bars display the average familiarity ratings participants gave to images from the same category and location as the attention cue (fully attended), the same category (but opposite location) as the attention cue (attended category), the same location (but opposite category) as the attention cue (attended location), the opposite category and location as the attention cue (unattended), or novel images. Each family of bars is further sub-divided according to whether the rated stimulus was a face (darker shading) or a place (lighter shading) image. The left panel displays familiarity ratings from the sustained attention condition and the right panel displays familiarity ratings from the variable attention condition. All error bars denote across-participant bootstrap-estimated 95% confidence intervals. Also see Figure 2 in the main text.