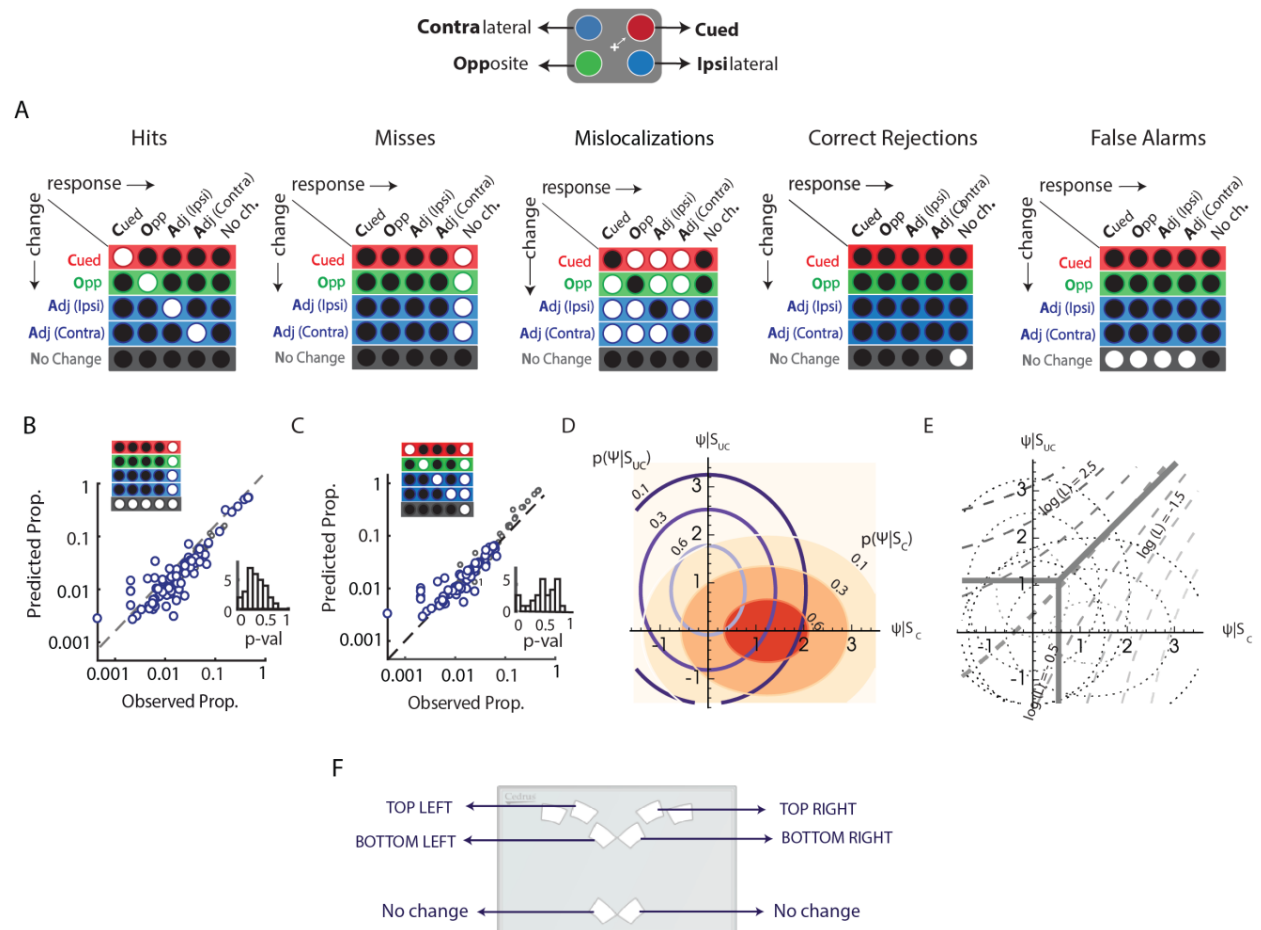


# Data Supplement : Supplemental Figure 1

**Figure S1. Stimulus-response contingencies, m-ADC model schematic and response schematic for the probabilistically cued attention task (Fig. 1A, main text).**



**A.** Schematics showing the different stimulus response contingencies: left to right - ‘Hits’ – response indicating the correct location of change; ‘misses’: no-change response on change trials; ‘mislocalization’: response indicating one location when the change happened at another location; ‘correct rejections’: correct no-change response, and ‘false alarms’: response indicating some location of change during no-change trials. **B.** Same as in Fig. 1G (main text), but showing predictions based on misses and false-alarms. Other conventions are as in Fig. 1G (main text). **C.** Same as in Fig. 1G (main text), but showing predictions based on hits and misses. Other conventions are as in Fig. 1G (main text). **D.** Contours of bivariate decision variable distributions (joint probability density function, pdf) in a task employing the method of constant stimuli in which stimuli or events (e.g. changes) can occur at one of multiple different strengths at the cued location (x-axis) or at an uncued location (y-axis). In the task shown in

Fig.1A (main text) this corresponds to different magnitudes of orientation changes, that are employed to measure psychometric functions as shown in Fig. 2A (main text). Red, filled contours: pdf contours for changes at the cued location; blue, unfilled contours: pdf contours for changes at an uncued location. Plots are based on average psychophysical functions calculated from experimental data (Fig. 2B; main text). **E.** Optimal decision surfaces in the m-ADC model. Dashed lines: Contours of constant log-likelihood ratio ( $\log(L)$ ) of the two decision variable distributions shown in panel D. Thick solid lines: Planar decision surfaces in the m-ADC model. The oblique decision surface closely approximates the optimal decision contours of constant log-likelihood. Thick dashed line: Representative optimal decision contour ( $\log(L) = 0.5$ ). Dotted lines: Decision variable pdf contours from panel D, shown in the background, for reference. Plots are based on average criteria calculated from experimental data (Fig. 2B; main text). **F.** Schematic showing the arrangement of buttons in the response pad (Cedrus<sup>TM</sup> – RB 830). The four top inner buttons correspond to the four possible locations of change. Either of the bottom two buttons can be pressed to indicate no change.