

Supplementary Materials

Data plots for each individual rat

Each 6-panel figure plots data from one of the 176 rats. The rat number and the CS informativeness (*i*), based on the C/T ratio, are shown above the first panel in the top left of the figure.

Panel 1 plots the rat's mean response rate (number of pokes per second) during the CS and during the pre-CS period in the inter-trial interval (ITI) on each of the 42 conditioning sessions.

Panel 2 (top right) shows on each trial the rat's response rate during the CS (dark grey line) and during the pre-CS period (light grey line). On the same panel, the blue line shows the cumulative poke count during the CS plotted against the cumulative CS duration across trials. (For this, the cumulative poke count excluded the first response in each trial, and the cumulative CS duration excluded the latency to first poke and the time the rat was in the magazine.)

Panels 3 and 4 (middle row) plot the cumulative response rates during the CS (solid black line), during the ITI (dashed black line), and the overall response rate in the context (CS plus ITI; dotted black line) across trials. The thick red line plots the nD_{kl} for the comparison between CS rate and overall (context) rate. In Panel 3 (left), response rates were calculated in the conventional manner, as the cumulative number of responses divided by total time. In Panel 4 (right), response rates were calculated as the cumulative number of responses excluding the first response in each CS divided by the remaining time out of the magazine (i.e., excluding the latency to 1st response in the CS and excluding the cumulative time in the magazine). The black vertical line marks the trial on which the cumulative CS response rate permanently exceeded the cumulative context response rate. The two red dashed vertical lines to the right of the black line mark the trial on which the nD_{kl} reached 0.82 (Odds 4:1 that CS rate > Context rate) and 1.92 ($p < .05$ that CS rate = Context rate). Note that these latter two values for the nD_{kl} were calculated starting from the trial on which the CS rate permanently exceeded the context rate (marked by the black vertical line) and therefore do not correspond to the nD_{kl} values calculated from Trial 1 shown by the thick red plotted line. The unbroken red vertical line marks the trial when the nD_{kl} was minimum. To make the initial changes in responding clearer, the x-axis of each plot is truncated at the trial number 1.5 times the trial number at which the $p < .05$ threshold was reached (e.g., if the nD_{kl} reached $p < .05$ at Trial 100, the axis is truncated at trial 150), or after a minimum of 20 trials.

Panels 5 and 6 (bottom row) show the parsed estimates of the CS response rate and pre-CS response rate estimated from the response rates as described for Panel 4. In both panels, the vertical red lines mark estimates of acquisition based on the nD_{kl} as the Earliest estimate (leftmost), and when the odds against the null hypothesis that the parsed CS and ITI rates were equal reached 4:1, 10:1, 20:1, and 100:1. (The x-axis in Panel 5 has been right-cropped 20 trials after the difference in parsed response rates reached Odds 20:1.)































































































































































































































































































































































