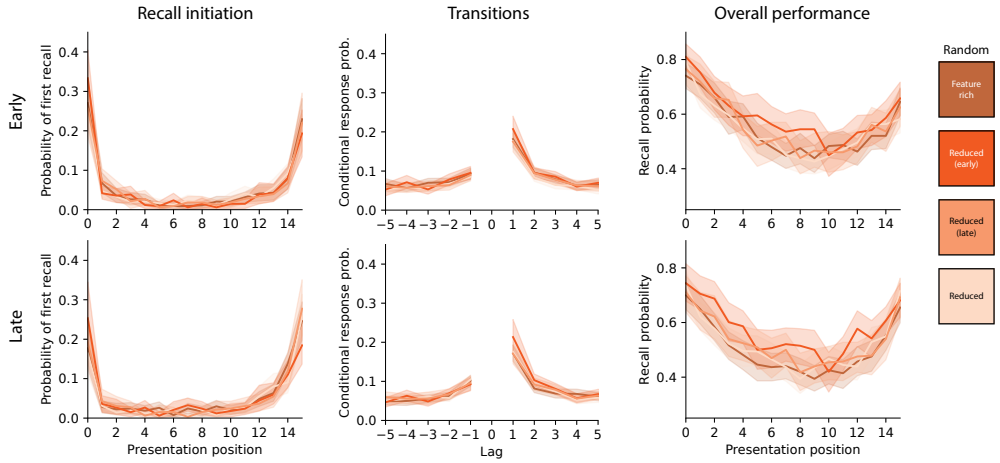
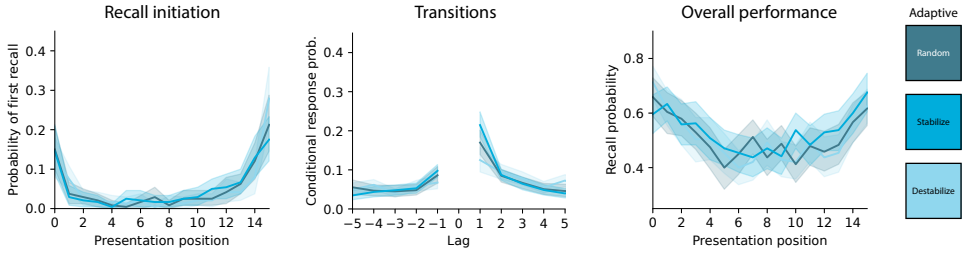
Supplementary materials for: Carryover effects in free recall reveal how prior experiences influence memories of new experiences

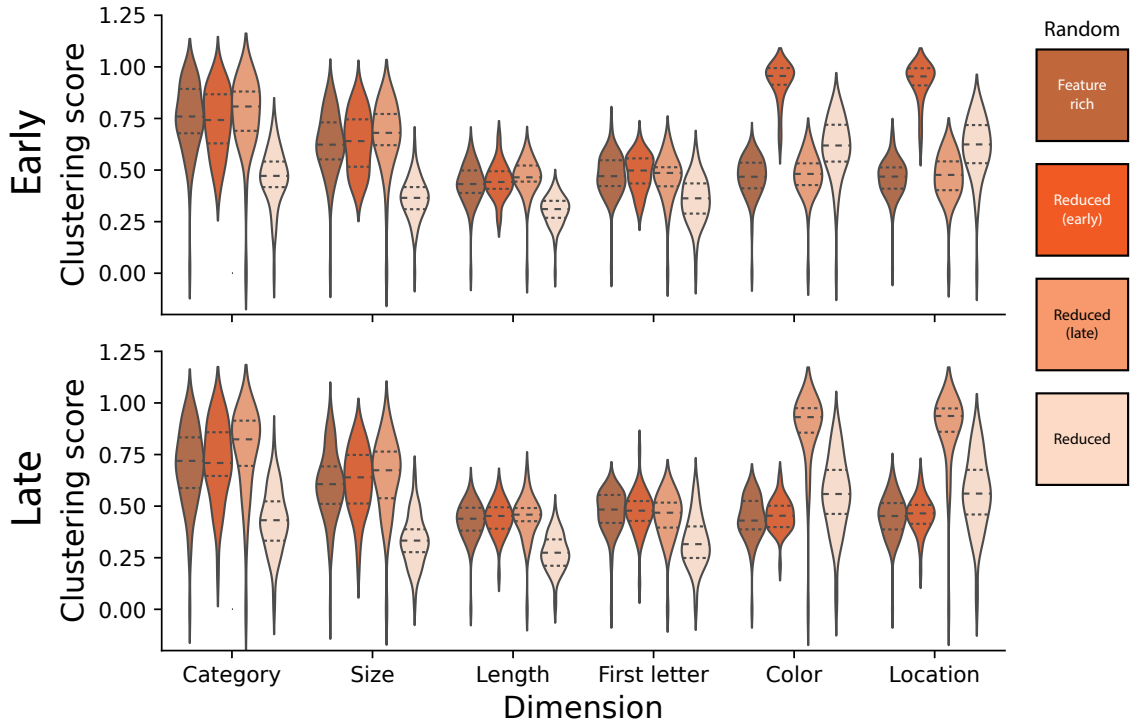
Jeremy R. Manning[1,*], Andrew C. Heusser[1,2], Kirsten Ziman[1,3],
Emily Whitaker[1], and Paxton C. Fitzpatrick[1]
[1]Dartmouth College
[2]Akili Interactive
[3]Princeton University
[*]Corresponding author: jeremy.r.manning@dartmouth.edu



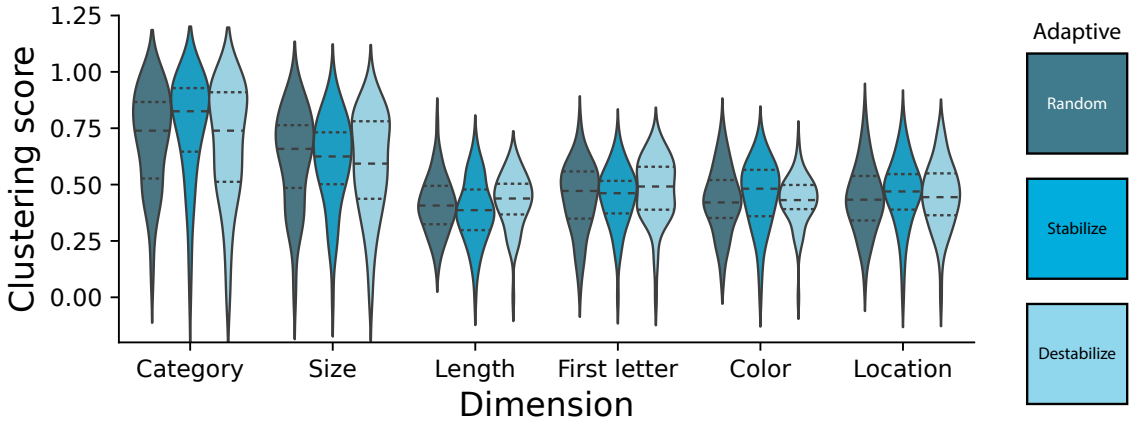
Supplementary Figure S1: Recall dynamics in feature rich free recall (random conditions). Left panels. The probabilities of initiating recall with each word are plotted as a function of presentation position. **Middle panels.** The conditional probabilities of recalling each word are plotted as a function of the relative position (Lag) to the words recalled just-prior. **Right panels.** The overall probabilities of recalling each word are plotted as a function of presentation position. **All panels.** Error ribbons denote bootstrap-estimated 95% confidence intervals (calculated across participants). Top panels display the recall dynamics for early (order manipulation) lists in each condition (color). Bottom panels display the recall dynamics for late (randomly ordered) lists.



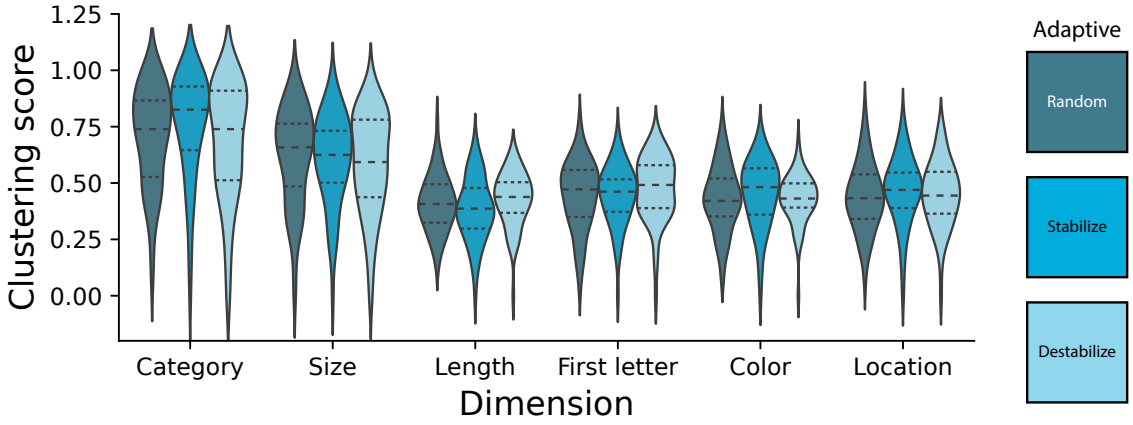
Supplementary Figure S2: Recall dynamics in feature rich free recall (adaptive conditions). Left panels. The probabilities of initiating recall with each word are plotted as a function of presentation position. **Middle panels.** The conditional probabilities of recalling each word are plotted as a function of the relative position (Lag) to the words recalled just-prior. **Right panels.** The overall probabilities of recalling each word are plotted as a function of presentation position. **All panels.** Error ribbons denote bootstrap-estimated 95% confidence intervals (calculated across participants). Condition is denoted by color.



Supplementary Figure S3: Memory "fingerprints." (random conditions). The across-participant distributions of clustering scores for each feature type (x-coordinate) are displayed for each experimental condition (color), separately for early (top) and late (bottom) lists.

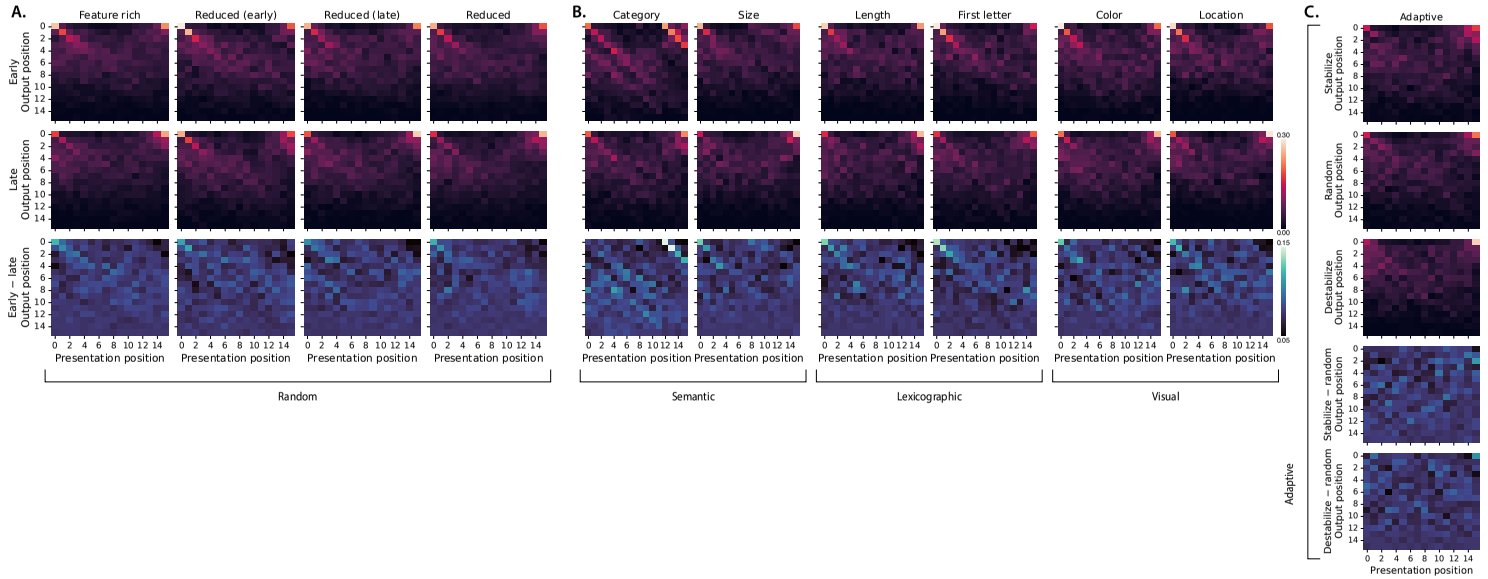


Supplementary Figure S4: Memory "fingerprints." (adaptive conditions). The across-participant distributions of clustering scores for each feature type (x-coordinate) are displayed for each experimental condition (color).



Supplementary Figure S5: Memory "fingerprints." (adaptive conditions). The across-participant distributions of clustering scores for each feature type (x-coordinate) are displayed for each experimental condition (color), separately for order manipulation (early, top) and randomly ordered (late, bottom) lists.

Supplementary references



Supplementary Figure S6: Probability of n^{th} recall matrices. Each sub-panel displays the average probability of recalling the given word (Presentation position, x-coordinate) at the given output position (y-coordinate); color denotes the probability. **A. Random conditions.** The top rows display data from early (order manipulation) lists, the middle rows display data from late (randomly ordered) lists, and the bottom rows display the differences between the matrices in the top and middle rows. Panel columns denote experimental conditions. **B. Order manipulation conditions.** The matrices are displayed in the same format as those in Panel A. Panel columns are organized by feature type (semantic, lexicographic, or visual). **C. Adaptive conditions.** The sub-panels are displayed in the same formats as Panels A and B, but here the matrices and contrasts (indicated in y-axis labels) reflect different list manipulation conditions.