Supplementary Materials

Individual Difference Correlations in Experiments 1 and 2

If co-occurrence both (a) links concepts whose labels co-occur and (b) builds on these links to link taxonomically related concepts whose labels share patterns of co-occurrence, then magnitudes of Co-Occur and Taxonomic effects should be positively correlated. We therefore analyzed correlations between Co-Occur and Taxonomic Difference Scores in Experiments 1 and 2. Scatterplots of Difference Scores along with Pearson correlations and corresponding significance values are presented in Figure S1. Consistent with the proposed role of co-occurrence, correlations were positive and significant. This pattern also holds within age groups (except for children in Cued Recall, for whom they were marginal).

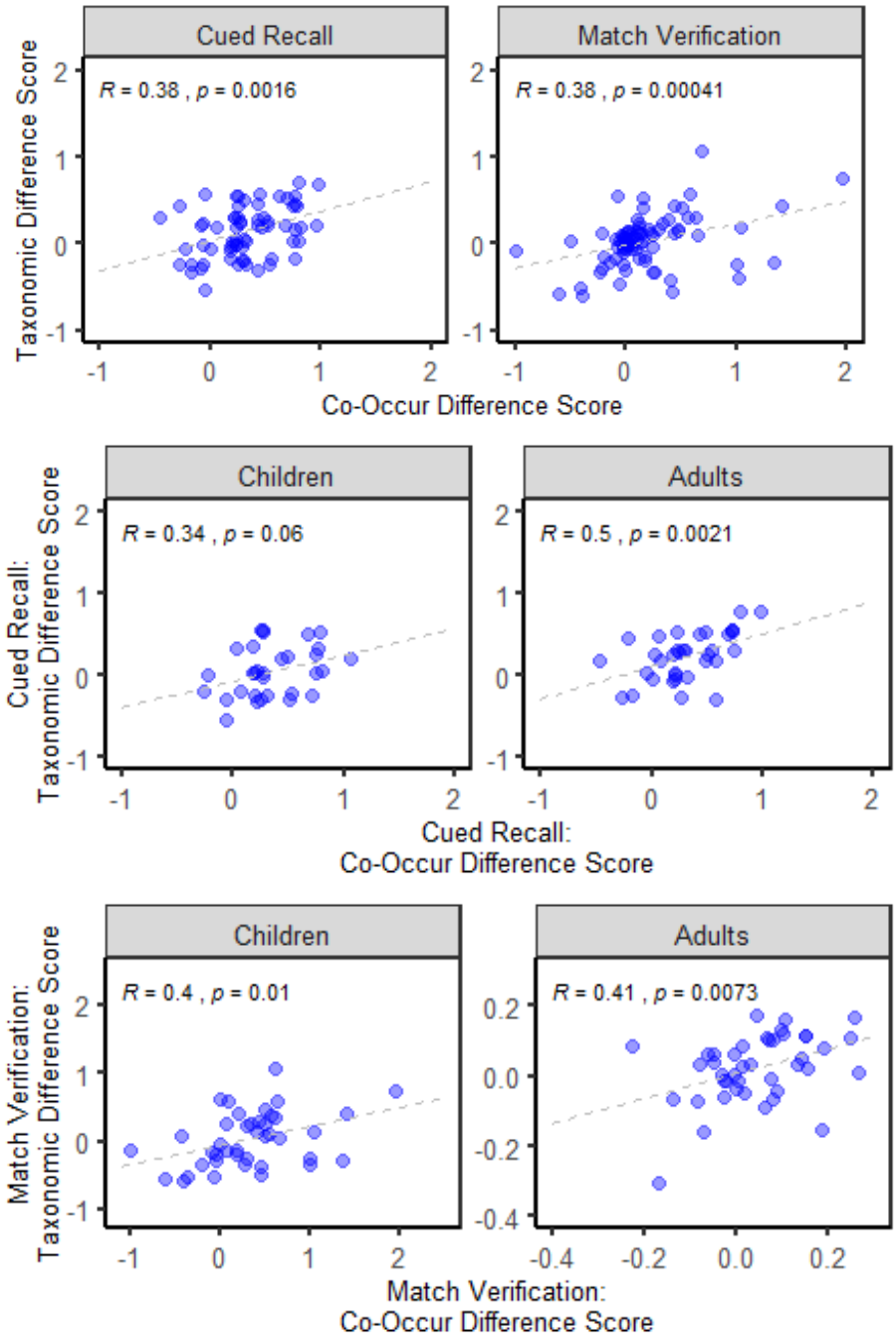

Figure S1. Scatterplots depicting correlations between Co-Occurrence and Taxonomic Difference Scores. Top plot shows correlations for full samples in Experiments 1 and 2. Middle and bottom plots show correlations within each age group in each experiment. Pearson correlations and corresponding significance levels are presented on the plots.

Analysis of Dwell Proportions in Experiment 3

The primary analyses in Experiment 3 analyzed the amount of dwell time spent looking at a given Target in each time bin. Here, we present supplemental analyses of the "Proportion" of dwell time spent looking at a given Target: I.e., the dwell time spent looking at the Target in each time bin, divided by the total time spent looking at either Target in a Pair Set in each time bin. As in the primary analyses, we analyzed both: (1) The degree to which Target Proportions differed in the Co-Occur and Taxonomic versus Unrelated Prime conditions, and (2) Whether differences from Unrelated varied across the Co-Occur versus Taxonomic Prime conditions.

Note that prior to conducting this analysis, data from 15 additional children and 6 adults were excluded because 30% or more of their Proportion values were "undefined" as a result of dividing by 0. We imposed this strict exclusion because having data within each time bin for the majority of trials was important for our analysis of looking dynamics over a fine-grained timescale.

Target Proportion Analysis. This analysis was identical to the analysis of Target Dwell time, with the exception that the outcome variable was Target Proportions. As shown in Table S1, the results of these analyses closely mirrored those of Target Dwell Time analyses. Specifically, both children and adults looked more overall at a given Target when they heard either a Co-Occur or a Taxonomic versus an Unrelated Prime (as shown by significant effects on the Intercept). Co-Occur and Taxonomic Primes also affected changes in looking at a given Target over time, including the rate at which looking at the Target increased (Linear term) and/or the sharpness of the peak in Target looking time (Quadratic term).

Table S1

Results of growth curve analysis of Target Proportions. Parameter estimates are for the Co-Occur and Taxonomic conditions relative to the Unrelated condition. Non-significant parameter estimates are in italics.

		Co-Occur		Taxonomic	
Model Term	Age Group	Est. (SE)	*p*	Est. (SE)	*p*
Intercept	Child	0.117 (0.020)	<.001	0.064 (0.020)	.002
Linear	Child	0.375 (0.071)	<.001	*0.100 (0.071)*	*.166*
Quadratic	Child	*-0.087 (0.068)*	*.200*	-0.146 (0.068)	.034
Intercept	Adult	0.055 (0.017)	.002	0.052 (0.017)	.003
Linear	Adult	0.149 (0.054)	.007	0.133 (0.054)	.014
Quadratic	Adult	-0.169 (0.034)	<.001	-0.129 (0.034)	<.001

Difference in Proportions from Unrelated. This analysis was identical to the Difference from Unrelated analysis of the Dwell Time, with Difference in Proportions from Unrelated as the outcome variable. As shown in Table S2 and Figure S2, the results of this analysis closely mirrored the results for Target Dwell Time. In children, Co-Occur Primes (relative to Unrelated Primes) produced greater overall Proportions of dwell time and rates of Proportion increase over time than Taxonomic Primes. In contrast, in adults, Co-Occur and Taxonomic Primes produced equivalent differences from Unrelated Primes.

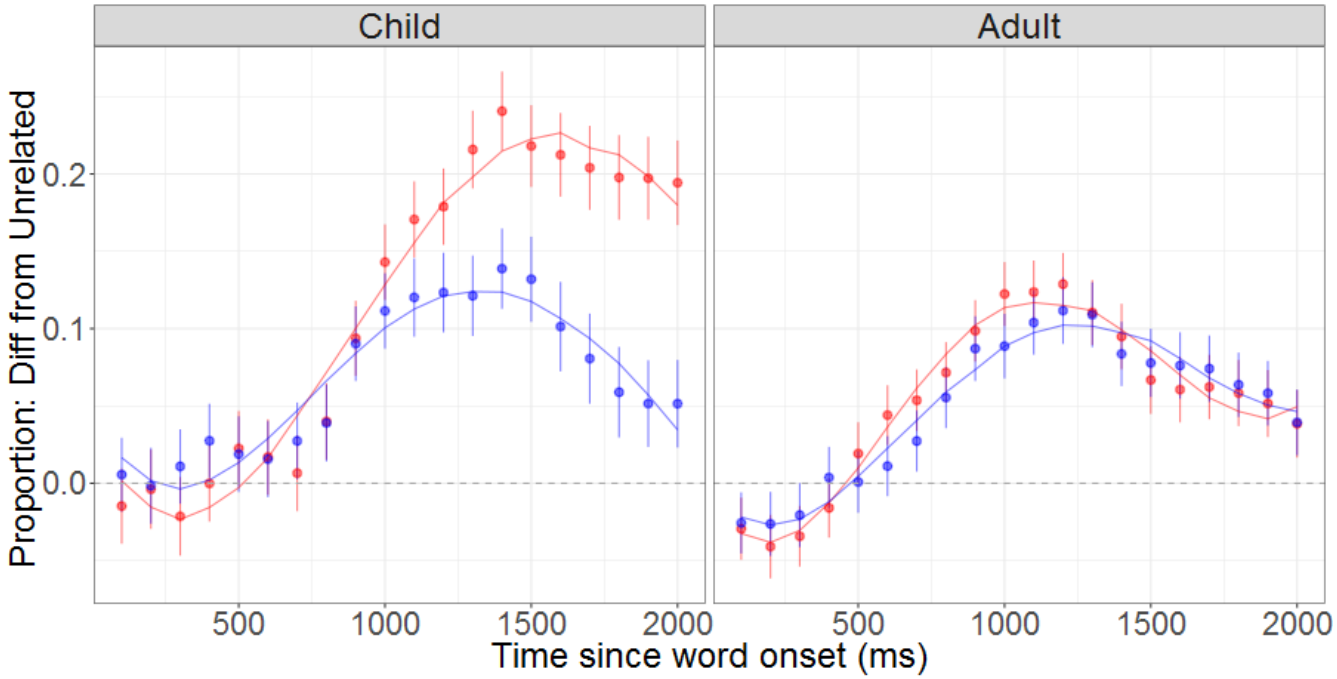

Figure S2. Difference in Proportion from Unrelated values in the Co-Occur (red) and Taxonomic (blue) conditions in Children and Adults, plotted with lines depicting the fitted values from the models. Error bars depict standard errors of the mean.

Table S2

Results of growth curve analysis of Difference in Proportion from Unrelated. Parameter estimates are for the Co-Occur relative to the Taxonomic condition. Non-significant parameters are in italics.

		Co-Occur versus Taxonomic	
Model Term	Age Group	Est. (SE)	p
Intercept	Child	.047 (.014)	.002
Linear	Child	.234 (.064)	<.001
Quadratic	Child	*.046 (.048)*	*.334*
Intercept	Adult	*.009 (.013)*	*.490*
Linear	Adult	*-.002 (.042)*	*.966*
Quadratic	Adult	*-.046 (.031)*	*.143*